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NARRATIVE

OF THE

Circumnavigation of the Globe

BY THE AUSTRIAN FRIGATE

NOVARA,

3133

(COMMODORE B. VON WULLERSTORF-URBAIR,)

Undertaken by Order of the Imperial Government,

IN THE YEARS 1857, 1858, & 1859,

UNDER THE IMMEDIATE AUSPICES OF HIS I. AND R. HIGHNESS

THE ARCHDUKE FERDINAND MAXIMILIAN,

COMMANDER-IN-CHIEF OF THE AUSTRIAN NAVY.

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BY

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MEMBER OF THE EXPEDITION, AUTHOR OF "TRAVELS IN CENTRAL AMERICA," ETC.

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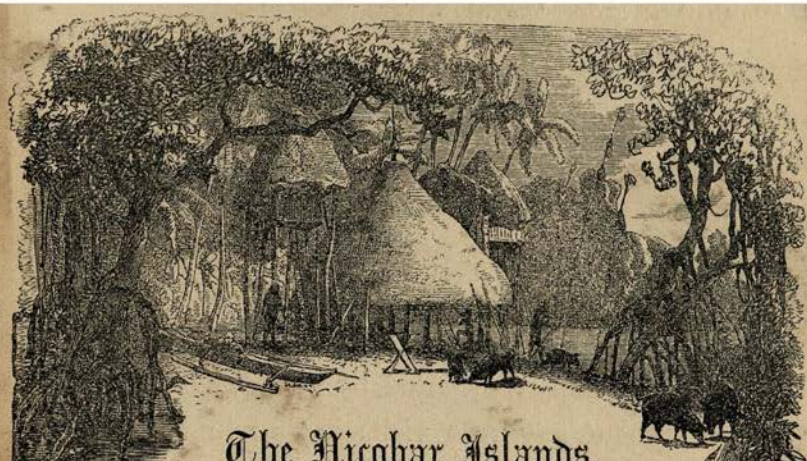


The Nicobar Islands.

STAY FROM 23RD FEBRUARY TO 26TH MARCH, 1858.

Historical details respecting this Archipelago.—Arrival at Kar-Nicobar.—Communication with the Aborigines.—Village of Saoui and "Captain John."—Meet with two white men.—Journey to the south side of the island.—Village of Komios.—Forest Scenery.—Batte-Malve.—Tillangschong.—Arrival and stay at Nangkauri Harbour.—Village of Itoe.—Peak Mongkata on Kamorta.—Villages of Enuang and Malacca.—Tripjet, the first settlement of the Moravian Brothers.—Ulála Cove.—Voyage through the Archipelago.—The Island of Treis.—Pulo Milù.—Pandanus Forest.—St. George's Channel.—Island of Kondul.—Departure for the northern coast of Great Nicobar.—Mangrove Swamp.—Malay traders.—Remarks upon the natives of Great Nicobar.—Disaster to a boat dispatched to make Geodetical observations.—Visit to the Southern Bay of Great Nicobar.—General results obtained during the stay of the Expedition in this Archipelago.—Nautical, Climatic, and Geognostic observations.—Vegetation.—Animal Life.—Ethnography.—Prospects of this group of Islands in the way of settlement and cultivation.—Voyage to the Straits of Malacca.—Arrival at Singapore.

THE earliest visitants of whom we have any certain information to this cluster of islands (situated in the Bay of Bengal, between 6° 50′ and 9° 10′ N., and 93° and 94° E.), appear to have been Arabian traders, who, on their

voyages to Southern China, landed on these islands, then known as Megabalu and Legabalu, on the first occasion in 851, and on the second in 877 of the Christian era. Abu-Zeyd-Hassan, one of these adventurers, gave a circumstantial account of these voyages, which has been translated into French, and published by Eusebius Renaudot.*

After the Cape of Good Hope was doubled in 1497, the Nicobars were chiefly frequented by voyagers in East Indian seas, but without any such visits having in the least contributed to enlarge our information respecting a group so important by geographical position.

In 1602, Captain Lancaster, commander of an English ship, passed ten days on the Nicobars, during which he hardly visited the southern islands, Great and Little Nicobar, but kept to the small island of Sombrero, of the northern cluster, now called Bampoka. He there found trees of such circumference and height, as would serve for the construction of the largest ships. Towards the middle of the seventeenth century, Koeping, a Swede, made his appearance at the Nicobars. Happening to be on board a Dutch vessel, which touched in 1647 at one of the islands, he thought he perceived among the inhabitants certain men furnished with caudal appendages, whereas it was their peculiar clothing, which consists of a long narrow piece of woven stuff, wound

* Anciennes rélations des Indes et de la Chine de deux voyageurs Mahométans, qui y allèrent dans le IXème siècle. Traduit de l' Arabe avec des remarques par Eus. Renaudot. Paris, chez Coignard, 1718. 8vo.

round the body and then left to hang loosely, which gave rise to such a report. With the arrival in Indian waters of Dampier, that daring but most trustworthy of navigators, the information respecting these islands first becomes more definite. He landed in the north-western Bay of the largest of these, to which he assigned the latitude 7° 30′ N., and gave a most extensive narrative of his adventurous career from the moment he abandoned the corsair-craft he had brought from Europe to seek for assistance on the Nicobars, to the period when, after braving a tremendous storm in a canoe, along with seven of his companions in misfortune he landed half dead on the northernmost point of Sumatra about 1706.

In 1708, Captain Owen, another English shipmaster, paid an involuntary visit to this Archipelago, his ship having been stranded on the uninhabited island of Tillangschong, whence he escaped with his crew to the islands Ning and Souri, only four miles to the westward, apparently what is now known as Nangkauri. For the first time history now records an outrage of which the natives were guilty towards the strangers.

It would appear that the captain, after having experienced an exceedingly friendly reception, laid down his knife, upon which one of the islanders, very possibly out of curiosity, laid hold of it, pushed the owner aside, and ultimately possessed himself of the knife. On the following day, as Owen was taking his mid-day meal under a tree, he was set upon and killed by several of the natives, who shot him

down with their arrows; on the other hand the crew, consisting of sixteen persons, were furnished with canoes and provisions, so that without experiencing any further ill-treatment they were so fortunate as to reach Junkseilan.

The first essay towards a settlement of the Nicobar Islands was made by the Jesuits in 1711, upon the most northerly island of the group, Kar-Nicobar. They succumbed however to the noxious influences of the climate, and the few neophytes speedily sank back into heathendom.

The second attempt at colonization by Europeans took place in 1756, when Lieutenant Tanck, a Dane, after taking possession of the entire group in the name of his sovereign, the King of Denmark, named the islands "*Frederiks Oerne*" (Frederick Islands), and founded the first colony on the northern side of Great Nicobar, or Sambellong. In the year 1760 this was transferred by the followers of Tanck to the island of Kamorta, but here too after a short time the experiment failed, owing to the unhealthiness of the climate.

In 1766, fourteen Moravian Brethren were settled on Nangkauri, with the view of extending the influence of the Danish East India Company. The want of information respecting the necessary conditions under which this colony was called into existence, was in all probability the cause of its speedy declension. Within less than two decades the majority of these settlers had fallen under the baneful influence of the climate.

On 1st April, 1778, the Austrian vessel *Joseph and*

Theresa, commanded by Captain Bennet, landed on the N.E. side of Kar-Nicobar, or New Denmark. This vessel had been commissioned by the Imperial Government to select, in the name of H. M. Joseph II., Austrian plantations and commercial stations on the farther side of the Cape of Good Hope. Of this remarkable expedition nothing more has been handed down to us than is related by excellent Nicolas Fontana, who accompanied the expedition as surgeon, in his book of travels, which was published at Leipzig in 1782.*

Neither the libraries nor the archives of the empire seem capable of furnishing more definite information respecting this interesting undertaking. However, on the other hand, through the kind offices of H.I.H. the Archduke Ferdinand Maximilian with the Government of H.M. the King of the Belgians, there have been found in the Royal Archives at Brussels several highly important documents, bearing upon this expedition, of which M. Gachard, keeper of the State Archives in that country, had the kindness to furnish us with copies; and while we propose in the following remarks to avail ourselves of the most interesting data, the more particular consideration of this circumstance, so interesting in the history of the development of our trade, will be deferred till

* Journal of the Voyage of the I. R. Ship *Joseph and Theresa* to the new Austrian plantations in Asia and Africa, by Nicolas Fontana, ship-surgeon to Mr. Brambilla, body physician to the Emperor, assistant surgeon in the army. Translated from the Italian MS. by Joseph Eyerle. Dessau and Leipzig,—"*Buch-handlung der Gelehrten.*"

the appearance of the commercial section of the Novara publications.

A Dutchman, named William Bolts, formerly in the service of the British East India Company, in the year 1774 made to Count Belgiojoso, at that period Ambassador in London of the Empress Maria Theresa, proposals for direct commercial intercourse between the Netherlands and Trieste and Persia, the East Indies, China, and Africa, with the object of supplying the harbours of the Austrian dominions with the products of India and China, without the costly intervention of other countries. This proposition having been brought under the notice of the Imperial Chancellor, Prince Kaunitz, at Vienna, was so cordially received by that minister, that Bolts received an invitation to present himself at the Empress's palace, in order to develope his plans more fully in person in that august presence. Bolts arrived in Vienna in April, 1775, and very shortly afterwards was invested by the Empress with all the requisite privileges for facilitating the prosecution of his great project. The imperial officials at Trieste were entrusted with the equipment and arming of the vessel, the supreme military council were required to provide the necessary pay for the soldiers and subaltern officers, and Bolts by special commission was formally empowered in the name of the Empress Queen, as also in that of her successors upon the throne, to take possession of all the territories which he might succeed in getting ceded by the princes of India, for

the behoof of such of Her Imperial Majesty's subjects as should purpose trading with the Indies.

It was the wish of the Government that the first expedition should take its departure from Trieste; Bolts however opposed this, for the reason that his vessel must take part of its lading from London, but declared himself prepared to make the most strenuous efforts to found a mercantile house in Trieste, and to take such precautions as should result in the second and all future expeditions being dispatched from Trieste.

Bolts hereupon first proceeded to Amsterdam with his newly-acquired privileges, and thence to London, as yet without being more fortunate in his attempt to set on foot the proposed association in the one locality than in the other. At last, at Antwerp in the Netherlands, he succeeded in interesting in his project a certain Baron von Proli, and two merchants, by the name of Borrekens and Nägeles, and with these three persons he entered into a contract of association, on 20th Sept. 1775. At the same time a fund of £90,000 was raised for the armament of a second trading vessel to the East Indies and China, and out of the same amount to establish a mercantile house in Trieste.

In possession of £25,000 sterling, which he had procured from his associates, Bolts proceeded to London, where he purchased a vessel, which he named the *Joseph and Theresa*, put a portion of her cargo on board, and on 14th

March, 1776, set sail thence for Leghorn. Here certain articles were to be taken on board, which the Government had promised to have ready, and which consisted of copper, iron, steel, and tools. Before Bolts left harbour on his voyage to the Indies he was invested by the Empress with the grade of Lieutenant-Colonel in their service, and for the better prosecution of his objects was provided by the State Chancery with comprehensive powers,* and a pass for barbarous countries, called a "*Scontrino.*"† The Empress at the same time provided the daring adventurer with letters of introduction under her own hand to the Emperor of China, the "King" of Persia, and the Indian satraps whose dominions he was to visit.

Baron Proli, one of the chief partners, went first of all to Vienna, and thence to Leghorn, and concluded an agreement with Bolts to dispatch a ship to the Indies in each of the years 1777, 1778, 1779, the cargoes of which should be worth at least £30,000 each, while Bolts, on his part, engaged to remain in the Indies three and a half years from the day of his departure, there to found factories, and to lay

* "I have drawn up these documents," writes Prince Kaunitz, in a state paper addressed to the Empress, dated 27th March, 1776, "in such manner as to advance the objects of your Majesty in establishing commercial intercourse between Austria and the Indies, without incurring disagreeable results, which might accrue from the conferring of unrestricted authority."

† A piece of parchment, cut out of a book in zig-zag fashion, which in former times was necessary in all commerce with barbarians, the captains of privateers, when unable to read, being enabled, by comparing the torn-out leaf (*scontrino*) with the counterfoil, which it was customary to give to all trading persons, to determine to what nationality the vessel belonged.

out to the best advantage the money realized by the sale of the merchandise consigned to him. The Empress Maria Theresa rewarded Proli for services already rendered, as also for those which he undertook to perform in the establishment of trading-exchanges in Trieste and Bruges, for the support of the over-sea commerce of the Austrian and Belgian provinces, by raising him to the dignity of Count.

The ship *Joseph and Theresa*, bound for the east coast of Africa, as also for the shores of Malabar, Coromandel, and Bengal, set sail from Leghorn in September, 1776, with a crew of 155 men. Unfavourable winds compelled Bolts to make the Brazilian coast, in order to take in fresh stores. Thence he lay a course for Delagoa Bay, on the S.E. coast of Africa, opposite the island of Madagascar, on which, on 30th March, 1777, he was so unfortunate as to get stranded, when he was compelled to start a portion of his cargo overboard. Bolts, however, turned to excellent account his stay on this coast, having purchased from two African kings, named Mohaar Capell, and Chibauraan Matola, a site of ground on both banks of the river Masoûmo, and, at a total expenditure of 126,267 florins (about £12,600), in which was included the cost of constructing the necessary vessels, founded a factory, for whose protection he also erected two small forts, which he furnished with cannon, and named after his two illustrious patrons, Joseph and Theresa.

After a more protracted stay on the coast of Malabar, where he purchased from the Nabob, the celebrated Hyder

Ali Khan, a number of plots of ground in the vicinity of Mangalore, Carwar, and Balliapatam, the very centre of the pepper trade, and erected a factory at an expense of 28,074 florins (£2800), this enterprising man set sail for the Coromandel Coast and the Bay of Bengal, and about the commencement of 1778 visited the Nicobar Islands, in order there also to found a factory. Unfortunately, of this visit there nowhere survive any detailed particulars, and the only document extant under Bolts' hand, which can throw any light on the subject, is a statement of the expenditure incurred in erecting a fort on the Nicobars, which, together with the purchase of a *goëlette,* and a snow, or two-masted vessel, for the coasting trade between Madras, Pegu, and the group of islands, amounted to 47,659 fl. 48 kr. (about £4760).

At the close of 1780 Bolts returned to Europe, and in May, 1781, cast anchor in the harbour of Leghorn. His exertions and his speculation had not been attended with the success anticipated, and despite fresh assistance afforded by the Austrian Government to the Association, which at first seemed to promise a more auspicious future for the undertaking, yet the political complications of the period, and especially the sudden, totally unlooked-for rupture of peace between France, England, and Holland, ere long entailed utter ruin on the trading company, which, in the year 1785, found itself compelled to stop payment.* Bolts died at Paris in April, 1808, in

* A few years previous, in 1782, a certain C. F. von Brocktroff, of Kiel, had addressed a memorial to the Emperor Joseph II., in the course of which he warmly

utter destitution, and Michaud, in his *Biographie Universelle*, dedicated an article to this hardy and enterprising, rather than shrewd and prudent, adventurer.*

About two years after the appearance of the Austrian ship in the Nicobar Archipelago, the Danes endeavoured to found there a missionary station of Moravian Brothers. Towards the close of 1778 the missionaries, Hänsel and Wangemann, sailed from Tranquebar to Nangkauri, where they arrived in January, 1779. In 1787 the mission at Nangkauri was once more abandoned, when the only surviving Moravian Brother returned to Tranquebar, and shortly after to Europe.

In 1795 an Englishman, Major Symes, touched at Kar-Nicobar, while on his voyage as Envoy to Ava and Burmah. His observations there may be found in the second volume of "Asiatic Researches," p. 344, in an article entitled "Description of Carnicobar."

In 1831, Denmark once more made an attempt to colonize, by means of a missionary enterprise, the group formerly known as New Denmark, and occasionally as Frederick Islands. Pastor Rosen landed in August of that year on the

advocated the annexation, settlement, and reclamation of the Nicobar Islands, and, on the strength of fifteen years' experience in the East Indies, promised immense profits to the Austrian-German trade by this method of procedure. This interesting treatise will be found among the Government Archives at Vienna, and will be published in full in another section.

* Bolts had several times come before the public as an author. In 1771 he issued in London a work in two volumes 4to, entitled, "Considerations on Indian Affairs," which was also translated into French. Further, he published a "*Recueil des pièces authentiques rélatives aux affaires de la ci-devant société Impériale-Asiatique de Trieste, gérées à Anvers*," which appeared in 4to (116 pages) at Paris, in 1787.

island of Kamorta, and first set up his establishment on the so-called Frederick Hill, then on the adjoining Mongkata Hill; somewhat later on the island of Trinkut, and lastly on the shore immediately beneath the Mongkata Hill. In December, 1834, after about a four years' stay, Pastor Rosen left the islands, and in 1839 published, at Copenhagen, his own experiences and personal observations, under the title: "*Erindringen om mit Ophold paa de Nikobariske Oerne*" (Recollections of my Residence on the Nicobar Islands).

In 1835, the Roman Catholic Bishop of the Straits of Malacca dispatched to Kar-Nicobar two French missionaries, the Fathers Chopard and Borie. But after a certain lapse of time, during which their missionary efforts gave promise of the most pleasing results, and when they had lived about a year on the island, the pious work fell through, owing to the credulity and prejudices of the natives, to whom the two missionaries were represented by the crew of a ship from the adjacent shores of the continent as English spies, whose object probably was to ascertain the products of the country, which thereupon would speedily be annexed by the English Government. The missionaries had to flee, and Borie expired in the arms of his companion before he could get off the island. Chopard afterwards, in the year 1849, published his adventures in this group of islands in the "Asiatic Journal of the Indian Archipelago," under the title, "*A few Particulars respecting the Nicobar Islands.*"

In March, 1845, Mr. Mackey, Danish Consul in Calcutta,

set on foot a small expedition to the Nicobar Archipelago. That gentleman hoped to find amongst the southern islands strata of coal, and made a voyage thither in prosecution of that object, on board the schooner *Espiègle,* commanded by an Englishman named Lewis, and accompanied by two Danes, Mr. Busch, the sole commander of the expedition, and a certain Mr. Lowert. By the end of May the adventurers were once more in Calcutta. With the exception of a few lumps they had not found coal-beds on any part of the island, while they lacked the physical strength requisite for founding the agricultural colony, which it had been intended to set on foot at the same time. The scientific results of this voyage are comprised in a small *brochure,* "H. Busch's Journal of a Cruise amongst the Nicobar Islands," (Calcutta, 1845).

A further scientific exploration of the Nicobar group was made by the naturalists attached to the Danish corvette *Galatea* in the course of their voyage round the world in the years 1845—7. A thorough examination of the Nicobars was one of the chief objects of the expedition set on foot under the auspices of the Danish Government. On the 25th January, 1846, at Nangkauri, Captain Steen Bille took formal possession of this group of islands in the name of H.M. the King of Denmark. Two natives, father and son, named respectively Luha and Angre, the former resident in Malacca, and the latter in Enuang, were on that occasion installed as chief magistrates; each being at the same time provided with a staff bearing the cypher of Christian VIII.,

and instructed, by means of a document drawn up in the English and Danish languages, on the subject of their duties, which consisted principally in hoisting the Danish Standard on the arrival of foreign ships in the harbour of Nangkauri.*

After the decease of Christian VIII., the Danish Government, in consequence of the violent political agitations of the period, did not show itself disposed to make practical use of their possession of the Nicobar Islands by any lasting colonization, but on the contrary in the year 1848 dispatched the royal corvette *Valkyrien* to the Archipelago, to bring away the flag and bâtons.†

In consequence of this, according to "Thornton's Gazetteer of India," the chiefs of the island of Kar-Nicobar hoisted the English flag, and through certain English merchants resident in Moulmein, expressed a wish to be permitted to

* The results of this voyage of discovery are embodied partly in a work in two volumes: "Steen Bille's account of the voyage of the corvette *Galatea*, round the world" (Copenhagen, Leipzig, 1852), partly in a Geographical sketch of the Nicobar Islands, with special remarks upon Geology, by Dr. H. Rink (Copenhagen, 1847): there will be likewise found in the Journal of the Asiatic Society of Bengal, under the heading "Nicobar Islands," and at p. 261 of the third volume of the "Journal of the Indian Archipelago," under the title "Sketches at the Nicobars," a variety of valuable contributions to our stock of knowledge respecting this island group. In addition, Mr. A. E. Zhishmann, Professor in the Imperial Royal Academy of Commerce and Navigation at Trieste, published, in anticipation of the projected visit of the *Novara* to this Archipelago, a valuable historico-geographical sketch, entitled, "The Nicobar Islands" (Trieste, Printing Office of the Austrian Lloyds, 1857), which appeared at the same time in the Transactions of the Imp. Roy. Geographical Society for 1857.

† Vide, "Indian Political Dispatches," of 1st February, 1848: also the "Hamburger Correspondent," of 30th August, 1848, and "Friend of India," for 1853, p. 455.

place themselves under the protection of the British Crown. This information, however, seems to be inaccurate, in so far as it professes to describe the conduct of the native chiefs. The inhabitants, it is true, hoist any flag given to them, because they are fond of imitating European customs, and by so doing believe they secure themselves against the pretensions of other nations; but there is nothing they so much dread as a regular occupation of the islands, and on every appearance of a war-ship are forthwith filled with alarm lest they should be about to be deprived of their liberty, and—their cocoa-nuts. Indeed they have a saying widely diffused among them, probably through the craft of some smart chiefs, that whenever a European should settle among them all the cocoa-nuts will drop from the trees, and they will thus see themselves deprived for ever of their most important means of subsistence. It is, on the contrary, more probable that the English ship-captains, who trade with these islands in order the better to secure their highly profitable trade in cocoa-nuts, made some propositions to the East Indian Government to take possession of this important group, by a similar procedure as that by which the Andaman islands were annexed somewhat later.

Since the unsuccessful attempt at the end of last century to extend Austrian commerce with the Indies and the coast of Africa, by founding a few colonies in those places, no vessel sailing under the Austrian flag had again visited the Nicobar Islands, and accordingly, on the dispatch of an

Imperial ship-of-war to those waters, it was naturally wished that she should on her voyage to China visit this group, on whose shores the Austrian flag had once been unfurled as a symbol of possession. On this occasion, however, the object was rather scientific than political. It was intended, so far as the time allotted for visiting these islands and the appliances at hand admitted, to undertake inquiries as to the most important geodetical points, together with astronomical, magnetic, and meteorological observations, and at the same time to make investigations and collections of the various objects of natural science, and thus to complete as it were the valuable labours carried out in 1846 by the Danish Expedition to the Nicobar Islands. The following pages are simply limited to giving a popular narrative of our own stay on this interesting island group, while more circumstantial information of the various scientific results obtained there will be deferred till the appearance of the special works being drawn up by the members, each in his own special section.

On 25th February, at 10 A.M., the naturalists, accompanied by the officers in charge of the scientific apparatus, and the midshipmen, after very considerable difficulty, succeeded in effecting a landing on the island of Kar-Nicobar, in a bay protected by a coral-reef (by observation 9° 14′ 8″ N., and 92° 44′ 46″ E.), between the villages of Moose and Saoui. At this point the surf beats incessantly over the huge reefs of coral upon a waste of gleaming white sand, which stretches in graceful curves from one point of rock to that next adjoining.

The few fruits which have been thrown up, or been carried hither, probably from some distant shore, have struck root in this coral sand, and a coronal of luxuriant palms, with their slim stems, and loaded with thousands of nuts, serves as food for man.

In the vicinity of the spot where we disembarked was anchored a barque from Moulmein, with a Malay crew, the majority of whom were tatooed on the thigh with extraordinary skill. They had been for a considerable period taking in a cargo of cocoa-nuts, which the natives had been exchanging against various merchandise. About thirty dusky natives, almost entirely naked, and for the most part without any head covering beyond the splendid raven locks which hung down over their shoulders, some carrying in their hands cutlasses, others long wooden lances tipped with bone, stood near the beach, and while we were yet a little distance off, called out to us in broken English, and with visible anxiety, "Good friend? No fear!" apparently anxious, in the first place, to have confirmation from us that we were really "good friends," and that they had nothing to dread, before they ventured quite close to us. When they were no more than twenty paces distant, they suddenly came to a halt, upon which some of their number, who appeared to be chiefs, gave their spears and cutlasses to those around, and advanced to us with a tolerably friendly air, at the same time stretching out their hands by way of salutation. They were for the most part large, well-proportioned men, of a dark bronze colour of skin.

The most disagreeable feature is the mouth, which, in consequence of the loathsome custom of incessantly chewing the betel-nut, seems to have become utterly distorted in shape. In a few cases this filthy habit had resulted in such deformity among the teeth, that these were barely visible between the thick swollen lips, like a malignant tumour! The apparel of the natives is pretty universally entirely primitive, consisting of nothing but a long very narrow strip of dark blue linen, which they wind round the body, bringing it from the front between the legs backwards, when it is made fast to the girdle, and the ends left to hang loosely down. Some of the natives make a very singular use of the different articles of old clothes which they receive in exchange from the ship captains, or have had given as a present, as they appear now in a black hat, now in a coat or a shirt, without a vestige of other clothing!

Almost every native we saw brought to us a soiled, crumpled-up testimonial, setting forth his good character, and his honesty in the cocoa-nut trade, which he had received from various ship captains, who bartered their merchandise for ripe cocoa-nuts, which they afterwards sold in the East Indies or Ceylon at an immense profit. The greater number of these testimonials were written in English; we found only one in German from the skipper of a Bremen ship, and one in Dutch. In these certificates are set forth the objects best worth enquiring for, as also a statement of the articles bartered in the course of exchange for cocoa-nuts, a practice

which is not alone of the utmost utility for those who may afterwards visit the islands for purposes of commerce, but also throw a most interesting light upon the evidences of civilization among the natives.*

These testimonials also frequently contain very humorous remarks about the unsuspecting natives, who assuredly would be less eager in producing them if they were acquainted with the contents. One of the earliest to extend to us the hand of welcome was a native who called himself Captain Dickson, a handsome, slim, dark-brown figure, with very long, fine, glossy hair hanging over his shoulders, and neatly gathered together with a bark ribbon. In the document presented to

* Thus, for example, we find on the island of Kar-Nicobar the following specimens of barter:—

For a sort of hunting-knife or cutlass, worth about $1½	300	pair of ripe cocoa-nuts.
„ a small knife-blade	100	„ „
„ six table knife-blades	300	„ „
„ an American knife	50	„ „
„ a hatchet	300	„ „
„ a musket	500	„ „
„ a double-barrelled gun	2500	„ „
„ a large spoon	150	„ „
„ thirty feet of silver-wire	2500	„ „
„ a small cask of rum	2500	„ „
„ a flask of arrack	10	„ „
„ three "sticks" of (negro-heads) tobacco	100	„ „
„ a flask of castor oil	50	„ „
„ a cabin lamp	500	„ „
„ a sack of rice	300	„ „
„ a piece of blue calico (about 6 to 8 ells)	100	„ „
„ a neck-cloth	100	„ „

Epsom salts, turpentine, spirit of camphor, eau-de-Cologne, and peppermint, are also much-prized articles of barter, and bring a large profit, being exchanged for old clothes, salt meat, onions, and biscuit.

us, which was dated 15th January, and bore the signature of the captain of the ship *Arracan*, there was written beneath, "Dickson, though a shabby-looking fellow, is a man of substance." In a second testimonial, it was said of a native: "He will do honour to England when she comes!" a remark which leaves plainly apparent the hope of the ship captain that these islands will speedily be occupied by the English. These certificates likewise contain a variety of important hints, especially with reference to the method of dealing with the natives, the most commodious anchorage, the difficulty encountered in landing, &c.*

Thus the most cursory communication with the natives convinced us that they must already have repeatedly done business with English ship captains, who had imparted to them a slight knowledge of the English language, and a few of the simpler principles of humanity and religion. When we gave them to understand that we visited them as friends, they replied in their broken English: "Not merely friends—brothers! all brothers! all only one father and one mother!" Hereupon each proceeded to light one of the cigars that had been pre-

* Thus, for instance, there occurred in one of these documents:—"In the village of Aurong, or Arrow, the best anchorage is opposite Capt. Marshall's hut, in from 13 to 15 fathoms water. At many points the coast is so dangerous, that one ship lost two of her men, who were endeavouring to land in a boat." In another certificate it was announced that the barque *Batavia* of Rotterdam, freighted with rice, of 442 tons burthen, while on her voyage from Rangoon to Europe, was wrecked in Danson's passage, 7th April, 1857, and her crew was very hospitably treated by the natives of Kar-Nicobar. Almost every one of these certificates concludes with the remark that whoever wishes to be on friendly terms with the natives must play no pranks with their women, nor shoot their fowls or hogs in the forest.

sented to them, while, for want of any other receptacle, they secreted the remainder in the wide holes transpiercing the lobes of the ears, after which they with the most frank munificence, and in token of their hospitality, pulled a number of young cocoa-nuts from the tree, and gave us their fluid contents to drink. Very singular was the method in which this was effected. They tie their feet together by the ankles with a loop of the same bast, or bark rope, which, when employed in fastening their long black locks, usually forms such a picturesque frontlet, and then clamber with the agility of cats to the summit of the palm, throw to the bottom the separated fruit, and slide swiftly down to the ground again. Holding in one hand a tolerably heavy young nut, in the other a sharp cutlass, they proceed at one sure blow to open the nut, in such manner that a small orifice is made, through which the refreshing liquid contents can be conveniently quaffed. When this has been evacuated the nut is usually split in half, in which form it serves as a most nutritious food for the fowls and hogs. Despite their hospitality, there was perceptible in all of them great anxiety, and the upshot of all their conversation always resolved itself into the stereotyped questions, "What did we really require? whether we wished to purchase cocoa-nuts, and would soon be leaving?"

Great and natural as our desire was to penetrate from the shore, thickly covered with its belt of cocoa-nut palms, into the rather flat interior, and thus obtain a nearer view of the hive-shaped, basket-formed huts which were visible under

the forest trees, we judged it much the better course to endeavour first of all to make the natives more confiding, and for that purpose invited them to accompany us on board. Eight of their number were finally induced to follow us, and came alongside in their elegant canoes, formed of the wood of the *Calophyllum inophyllum,* one of the most splendid trees of the primeval forest of the islands. As soon as we reached the frigate, only a single one, Captain Dickson, could be induced to clamber up of the man-ropes; the rest did not venture to leave their canoes, and one, who called himself Captain Charlie, a short, lank little fellow of boyish appearance, who for all apparel wore a dirty cloth cap on his head, trembled with terror through his whole frame when he saw our big guns. Captain Dickson, too, did not seem to feel himself altogether comfortable while on board, and although there was much to excite his curiosity, he soon longed to get out of the large ship, back again into his own frail skiff. Quite peculiar was the impression made upon him by a pair of live cows; such large animals he gave us to understand were not found upon his island.

Meanwhile a number of natives had approached the frigate in their canoes, bringing swine, fowls, plantains, yams, and eggs in hollowed-out cocoa-nut shells, which they offered as presents, but at the same time inquired what we intended giving them in return. They greatly wished for biscuit, brandy, medicines, clothes, but above all else for black hats, which most probably results from their having occasionally

seen the captains of English ships wearing round hats, whence they now seem to imagine that such a head-gear is the insignia of captain's rank, or of a chief.

Their knowledge of money was confined to Rupees, which they discriminated into two sorts, viz. the ordinary East Indian coin, and the English sixpenny-piece, which they called "small Rupees," covering with them, by way of ornament, the ends of the small bits of bamboo which they usually wear through the hole that transpierces the greatly distended lobe of the ear.

Of the two Catholic missionaries, Borie and Chopard, who in 1835 had remained a short time on the island, not one of the natives could give us any particulars; and likewise of the Danish corvette *Galatea*, which visited the group in 1846; they had but a dim remembrance, and even this of a far from complimentary character; the poor people having been overwhelmed with the apprehensions that their island was about to be taken possession of, and themselves exposed to a lingering death by hunger. "Danish bad people," they exclaimed, "wanted to take our island. Suppose I could come to your island and take it? Not good! no good people!"

We returned on shore with the natives, who, in consequence of their friendly reception on board, had already become somewhat more tranquil and trustful. Tents were now pitched, the astronomical and geodetical instruments, together with the barometer and thermometer, were adjusted, the tide-gauge fixed at the most suitable point, and the island

traversed in all directions for scientific purposes, so far at least as the density of the forest and the mistrust of the natives would permit.

On the very same day we visited the Cove of Saoui, on which is situated the village of the same name, whose chief is called "Captain John." This worthy had received by way of present an old cast-off blue uniform frock, and was now making strenuous exertions to squeeze his all too little flexible limbs into this tight thick cloth coat, and to button it, despite the tropical heat, round his naked body up to the very throat. He was anxious it should not be reported of him that he did not sufficiently value the distinction awarded him, or did not comprehend how to make a proper use of it. Unlike the rest of his compatriots, Captain John also wore shoes and pants, and in consequence openly claimed to belong to the privileged classes. He was surrounded by a considerable number of natives, who presented themselves to us, as Captain Morgan, Captain Douglas, Dr. Crisp, Lord Nelson, Lord Byron, Lord Wellington, and so forth, having been indebted to the singular whimsies of some English captains, who thought it a good joke to confer on these filthy brown people the illustrious names of the hereditary and intellectual aristocracy of Great Britain.

Captain John accompanied us along the coast to his own domicile by an exceedingly difficult and sunny path, having designedly concealed from us the existence of a much more commodious track through the forest to the village, which con-

tains only seven houses. These are erected in a broad open space, and in consequence of the great humidity of the soil during the wet season, consist of eight or ten poles, from six to eight feet in height, so that a man can easily pass under them. They comprise but one large apartment, into which access is obtained by a neatly-carved ladder of bamboo-reed, which during the night, or when the occupants leave the hut, is usually taken away, so that, without using locks or bolts, it is pretty difficult to get in. The flooring is constructed of bamboo planks, bound together with Rotang (*Calamus Rotang*), in such a manner that the air from beneath can circulate freely through, and, in a similar way, the neat basket-work of the hive-shaped structure is vaulted. A dense straw thatch serves as well to keep out the sun's rays as the rain. The internal arrangements are very simple. In the rear is a sort of fire-place, a low block of wood hollowed out, and the cavity filled with sand and stones, upon which is placed a variety of utensils of clay, imported from the adjoining island of Chowry, the only island of the entire Archipelago where any industry is carried on. From the beams of the roof are suspended hollowed-out cocoa-nuts, strung together in pairs, and serving as water jars, as also elegantly plaited baskets and the few possessions of the family, and, lastly, some fruits, betel-leaves, and tobacco, as offerings to the Eewees, or evil spirits, in the event of their paying a visit, and having an appetite for such fare. Further forward, opposite the entrance of the hut, there are stuck on the side

walls, as evidences of special prosperity, numerous cutlasses, spears, javelins, and paddles. Besides, there are laid on the floor plaited straw-mats, which, rolled up during the day, are stretched out at night and, together with a small wooden stool for a pillow, serve as couches on which to repose. The hut might furnish sleeping quarters for about ten men. As, moreover, all the cookery is carried on therein, and there is no means of ventilating from above, the interior is completely saturated with smoke, and all articles are soon begrimed with smoke and soot. The natives, however, apparently take no precautions to get rid of the smoke, because it contributes to keep them free of a far more subtle foe, the mosquito, who, especially during the rainy season, becomes a formidable torment for their naked bodies.

In the shady space beneath the hut, which sometimes serves as a workshop,—if one may venture so to designate the industry of the inhabitants of the Nicobars generally,—Captain John had suspended upon a transverse beam a sort of swing, in which he occasionally rocked himself, much to his own delight, while for his guests was provided a wooden arm-chair, which had evidently come into his possession in the course of some barter with the captain of a merchant vessel.

The old chief spoke with marked predilection of the captain of the barque *Rochester* of London, a gentleman named Green, who, by his humane and strictly conscientious dealings with the natives, seemed to stand in high respect, and afforded a striking example of what beneficial influence is exer-

cised by individual English ship captains over the wild races with whom they come in contact in the way of trade, and how much they have it in their power to make their nation respected in all parts of the globe. We venture to assert that these English merchantmen, during their cursory visits, have done more towards paving the way for civilizing the Nicobars than the Danish and French missionaries during their residence of years. Not a single native understands one word of Danish or French, but almost every one speaks English, sufficient, at all events, to make himself understood in that language. The talkative old fellow next held forth an English Bible, which had been carefully stowed away on one of the cross-beams of his hut, and of which, as he told us, he had been made a present by Captain Green, on that gentleman's last visit. "This is my Jesus Christ," said Captain John, full of unquestioning faith in the marvellous power of Holy Writ:—"when I feel ill, I lay this little book under my head, and I get well again!" The worthy fellow could neither read nor, so far as we could perceive, did he precisely comprehend what was printed in the book, yet he seemed instinctively to feel that it was of no ordinary purport, and accordingly held his present in high honour, as a sort of talisman, whose power and efficacy one might confide in, without his being able precisely to account for such a belief. We turned over the leaves of the little volume, which had been issued by the renowned, wide-spread, and beneficent London Bible Society, and found on the fly-leaf some English verses

in Green's handwriting, and some encomiums upon the inhabitants of Kar-Nicobar, "The most virtuous people that Captain Green had fallen in with during eight and thirty years' sea-faring;" closing with the remark, "What a pity they have no missionary!"

In truth, the inhabitants of Kar-Nicobar are among the most perfect of human-kind. In their commerce with us they showed themselves to be child-like and ignorant, yet virtuous, trustworthy people, without ambition or the thirst of knowledge, but also without jealousy or envy. If ever any breach between themselves and the Europeans has been pushed the length of violence, such has pretty certainly resulted rather from their being in a measure suddenly incited to self-defence than from any open predisposition to mischief. When we inquired of one of the natives in what manner breach of faith is punished on the island, he replied with the utmost *naïveté*;—"We never have such—we are all good;—but in your country there must be many evil men, else what for would you require so many guns?"

In company with some of the natives we had proceeded upon a stroll through the magnificent cocoa-forest along the beach, in the course of which we reached several huts scattered at random through the thicket, the inhabitants of which received us in the most cordial manner. Their wives and children however had all retired in a body, and during our entire stay never once made their appearance. Indeed the natives, in the hope of hastening our departure, pretended

that their families had in their panic fled into the forest, and must starve of hunger if we should remain long, and so prevent them from returning to their usual abodes. This however was but a hoax. The natives knew well enough where their families were lurking, and provided them with food and drink. This extreme shyness of the female portion of the population arises apparently from the incivilities of which the sailors of the merchant vessels were guilty towards the natives, whose moral feelings and delicacy of mind, considering their low state of civilization, becomes doubly extraordinary.

An attempt to penetrate deeper into the interior of the island was baffled through the obstacles which are interposed by the unchecked luxuriance of tropical nature. The vegetation grows densely down to the very sea, which is separated from the rich foliage above only by rocky reefs and narrow dunes of sand, washed by the furious surf. A broad belt of *Rhizophoræ*, gigantic *Barringtonias*, *Pandanus*, *Areca*, and cocoa-palms, encircles the island, to which succeeds a somewhat higher land grown with dense grass and interspersed with groups of trees, from which, lastly, spring a few thickly wooded peaks of about 150 to 200 feet in height. Through this girdle it requires the most violent efforts to force one's way, while, on the other hand, it is wholly impossible, owing to the dense tangle of climbing plants and bamboo, to advance further into the forest over the grass flat, unless a path be previously cleared with hedge-knives,

which, even could more time be devoted, would call for immense exertion. Our researches therefore were necessarily confined for the most part to the coast region.

After several hours of strolling about, collecting and examining as we went on, the naturalists found themselves collected once more on the open space facing Captain John's hut, where meanwhile a pig had been roasted by our sailors in the open air, which we had purchased for three shillings of our corpulent friend Dr. Crisp. The natives had at first protested against this improvised hearthstone, being apprehensive lest the fire should reach their huts, the roofs of which are thatched with dried palm-leaves. "It is as inflammable as gun-powder," remarked the old chief in an anxious tone, when our people had with great want of foresight lighted the fire too near the buildings. Captain John and his kindred did not need to be invited twice to partake of our meal, at which they proved themselves excellent trenchermen. The inhabitants of these islands generally eat vegetables only, the use of meat being for the most part restricted to festive occasions. The use of salt is as yet unknown to them. They only use sea water for the purpose of seething their pigs and hens, by which process the flesh gets a slight flavour of salt. During our luncheon, which had made the natives yet more confiding than ever, we found an opportunity of hearing something about the various festivals of the Nicobar islanders.

When a native falls down from a tree, or is bitten by a

snake, or is otherwise wounded or dies, the Nicobarians forthwith discontinue all work, and institute a fast, which they term Uraka. With the commencement of the S.W. monsoons or rainy season (when the wind comes from "yonder," quoth Dr. Crisp, and pointed with his finger to the southward), the inhabitants of Kar-Nicobar hold their chief festival, which lasts fourteen days, and is called Oïlere.

They have a similar festival at the end of the damp season, or N.E. monsoon, to which the pigs, which play quite a conspicuous part in it, impart an entirely peculiar character. Several weeks before the commencement of this *fête*, a large number of these unclean but useful animals are confined in small stalls, whence they are released on the feast-day, and set loose in a well-fenced space, where they are teased and pricked with lances by all the courageous, or rather mischievous, youth of the island. The Nicobarians seem to attach special importance to the swine being driven wild, and themselves engaged in a regular struggle with the infuriated animal, in the course of which severe wounds are by no means of rare occurrence. We ourselves saw several young natives, who a few days previously had been severely injured in a similar contest with some enraged pigs. When this anything but æsthetic spectacle has lasted some time, the pigs are killed, roasted on the fire, and devoured by the combatants and spectators.

A not less strange and even more barbarous festival is that which is held about the same time as the one just men-

tioned. This consists in exhuming the bones of all those who have died during the year elapsed since the last N.E. monsoon, and have been interred in a sort of cemetery called "*Cuyucupa.*"* They next bring these bones into a hut, seat themselves in a circle around the ghastly mementos, and shriek and howl as at the day on which the relation died. While this scene of lamentation is going on, a lighted cigar is usually stuck into the bony mouth of the grisly skull, after which the latter is consigned to the grave again. The rest of the bones however are either thrown into the deep sea or hid far in the forest, while at the same moment, as a further evidence of sorrow, a number of cocoa-palms are cut down, and their fruit scattered to the winds. By such symbols they apparently wish to express their overwhelming grief, their weariness of existence, and their indifference to the most valued gifts of nature, so that they would even deprive themselves of the most universally necessary of the means of subsistence—were it not that, owing to the readiness with which the sea-shore palm is propagated, the nuts thus scattered at random, in all the indifference to sublunary considerations incidental to a paroxysm of grief, speedily strike root, and after a few years lift up their heads again in the forest, at once ornamental and nutritious.

* This place of interment is situated close to a small village on the north-east side of the island, where the graves are visible in the shape of a number of round stakes sunk about three or four feet into the earth, which are adorned with all sorts of variegated cloths and ribbons.

At all these festivals the natives assemble in the various villages, and at these seasons spend days and weeks with each other. Earlier visitors to Kar-Nicobar estimate the number of villages on the island at about six or seven only. The natives on the other hand gave us the names of the following thirteen: Arrong (or Arrow), Saoui, Moose, Lapáte, Kinmai, Tapóimai, Chukchuitche, Kiukiuka, Tamalu, Páka, Malacca, Komios, and Kankéna, which all together would hardly number much above 100 huts, and about 800 or 900 inhabitants.

Southward of our anchorage we fell in with a small stream, which near its embouchure on the beach was lost in a sand-bank. Some of the members of the Expedition explored it in a very small flat-bottomed boat, a Venetian gondola, which was transported across the bar in order to admit of its being sculled up the river. At first it was found to be about 2½ feet deep, by about 12 to 14 yards in width; the general direction of its very sinuous course being towards E.S.E. All around the forest presented a scene to which perhaps only the fantastic whimsicality of certain theatrical forest sceneries might furnish a dim resemblance. Along the steep bank of the river rose to a height of nearly 100 feet the slender Nibong palm, adorned with blossoms and clusters of fruit, and close adjoining the graceful Catechu palm. Gigantic forest-trees, with thick squat trunks, extended their shady masses of foliage far over the stream; screw-pines towering up from the scaffold-like arrangement of their numerous roots, were reflected from

the glassy bosom of the water; clumps of bamboo, absolutely alive with butterflies; nymph-like aquatic plants, mossy green banks, and tree-ferns with indescribably graceful corollæ, all combined here to form a landscape of the most enchanting richness, in the water, on the shore, and in the air. Suspended over the whole scene, partly in leaf, partly in bloom, a gigantic garland of climbing and creeping plants, in living cords of every variety of thickness, rose in a lofty arch above the limpid element, interlaced and girt round with thousands of blooming and flourishing parasites! Then, too, from amid the mysterious gloom started forth the strangest voices and cries, without our being able to descry the animals themselves. In the water, which was perfectly sweet to the taste, swarmed multitudes of fish of from one to four inches in length. After rowing about one nautical mile and a half up the stream, some rapids and rocks prevented our further progress, the stream itself being but twelve feet wide. A little further to the east occurs a similar small river, which however had even less water, and at its mouth is yet more sanded up and inaccessible than that above described.

After we had lain for six days at anchor on the N.W. coast of Kar-Nicobar, and were once more casting about how to make out our long-desired excursion through its almost impermeable forests, we suddenly perceived in the distance upon the beach two men in European dress, with muskets

upon their shoulders, who, conducted by some absolutely naked natives, speedily approached us. One, a fine-looking, well-formed young man of about 20, addressed us in French, saying he was super-cargo of the Sardinian brig *Giovannina* of Singapore, and was occupied in taking in a cargo of cocoa-nuts upon the southern shore of the island. The natives had been so unsettled by the arrival of a war-ship, that they loudly affirmed a pirate ship had made its appearance, which would rob and destroy them all; whereupon the most anxious of their number entreated the few whites who fortunately happened to be among them to start immediately for the north side of the island, where the Colossus lay at anchor, so as at all events to ascertain what was to be their fate. In the course of the conversation which sprung up between ourselves and the two strangers, we found that the super-cargo was a Frenchman, born at St. Denis in the island of Bourbon, and was named Auguste Tigard, while his companion was a Sardinian. They were both singularly pale and embarrassed on first falling in with us, apparently from surprise and delight at finding themselves so unexpectedly in the society of white men at so solitary a spot; ere long however they felt themselves more at their ease, visited the frigate, were provided with clothes, medicines, and wine, and at a later period were of much use to us in our intercourse with the natives. Tigard remarked that the sugar-cane, which at present grows wild on the island, could, judging by

his own personal experience, be very profitably grown for the production of sugar, as also that tobacco, cotton, and rice thrive in the most conspicuous manner.

At present the cocoa-palm is the sole plant which is cultivated by the natives of Kar-Nicobar. It supplies them with all they require for food and lodging, for house-furniture, or for commerce with foreign peoples. The stem of this slender column, from 60 to 100 feet in height, by about $2\frac{1}{2}$ in thickness, with its heavy green thatch of leaves, is very porous and slight looking, but is yet stiff and strong enough to furnish cross-beams, laths, and masts for huts and boats. The fibres of the bark and of the nut-shells (known in commerce as *Coir*) supply cordage and line; the immense fan-shaped leaf (3 feet wide by 12 to 14 in length) of the coronal serves as a covering for the roof, as also for plaited work and baskets. The juice of the nut, shaped like an egg, yet somewhat triangular, and about the size of the human head, prevents the native from feeling even in the slightest degree the absence of available spring water, and is the sole beverage which invigorates and refreshes the wayfarer through these forest solitudes. Frequently did we experience a glow of thankfulness to all-bounteous Nature, as often as some hospitable native handed to us for our refreshment, exhausted and thirsty as we were after our fatiguing wanderings, a green cocoa-nut, that vegetable spring of the tropical forest.* The kernel of

* It is customary to call the liquid contents of the green, unripe cocoa-nut by the name of *cocoa-nut milk*; but it is rather a clear, delightfully palatable water, which

the ripe nut, thoroughly dried and pressed, gives forth a strong, clear, tasteless oil, which is used by the natives for anointing their skin and hair, and at the same time forms so important an article in European commerce, that above 5,000,000 ripe cocoa-nuts are annually exported through foreign mercantile houses in exchange for European fabrics. The hard shell of the cocoa-nut is the sole drinking cup of the Nicobar islanders, and the cooling, refreshing juice, which is extracted by an incision in the sheath of the palm-blossom before the latter has expanded, is the sole fermented beverage of which they make use. When brought into a state of fermentation it possesses similar intoxicating effects with the Chicha of the American Indian. Here, as among other half-savage races, we had occasion to remark, that the chief food of the aborigines is also made available for supplying them with their favourite liquid stimulant, and just as the native of India effects this purpose with rice, the African from the Yucca, or the Yam, the South-sea Islander with the Kawa, and the Mexican with the Maize or the Agave, so the inhabitant of the Nicobars avails himself of the cocoa-nut at once for the supply of the first necessities of his existence, and the excitement of his brain by artificial stimulant.

neither in colour nor taste at all resembles milk. This is obtained or pressed from the white, sweet, rather hard kernel, which is itself extraordinarily nutritive, and forms the daily food of the inhabitants. For an entire month, during which we could procure neither cows' nor goats' milk, we experimented on the use of the fluid obtained from the ripe cocoa-nut in our tea and coffee, and found it so excellent that we hardly felt the privation of animal milk.

On 27th February, towards evening, after a stay of seven days on the north side of Kar-Nicobar, which had been spent in scientific operations of the most varied nature, we again set sail, and next morning cast anchor on the south side of the same island, close to the village of Komios. The current, which at this point sets to the E.S.E., runs about three miles an hour, so long as the flood-tide continues, but as soon as the ebb-tide sets in, it chops round, and runs with greatly diminished velocity. The landings on the south side, which, on leaving the northern promontory, shows a much richer vegetation, are somewhat difficult to discover, since at almost all points reefs and coral-banks project from the shore far into the sea, so that after doubling the cape it is necessary to stop short a pretty considerable distance from the land.

While we were coasting along the eastern shore we could perceive through the telescope, at the village of Lapáte, consisting of some eight or ten huts, a great number of women and children, who were rushing to and fro among the huts in the utmost confusion, till suddenly all disappeared in the forest. These were evidently fugitives from the north side, who were now once more betaking themselves to the forest, accompanied by the native females of the east and south sides, when they saw the dreaded floating giant approaching them. A beach of dazzling white coral-sand, sprinkled over with thousands of living mussels, low melancholy-looking mangrove swamps, and a superb forest of trees with lofty stems, through which lay a beaten footpath, was all that the flat shore

offered to our view. The Frenchman already mentioned had indeed apprized the inhabitants of our arrival, and had endeavoured to explain to them our friendly intention, but it was in vain,—the greater portion of the population had taken to flight, and only dogs and armed men were left behind. Here also we could not see a single woman. However, we were informed by M. Tigard, who lived several weeks in the village of Kankéna, and had been treated by the natives as one of themselves, that the Nicobar women have their hair cut quite short, and simply wind round their dusky bodies, all smeared with oil, a piece of white or red calico at the loins. They are generally ugly, but strictly virtuous, and regard the Europeans as an inferior race, as compared with their native lords.

As we were making for the land in what is called Komios Bay, near the village of the same name (situate according to our observations in 9° 37′ 32″ N. Lat. and 92° 43′ 42″ E. Long.), a number of stalwart natives approached us from the forest, one of whom, who called himself Captain Wilkinson, proved to be the most intelligent and graceful of their number. He was extremely eager to give us a lot of information respecting the more southerly islands of the Nicobar Archipelago, with which the inhabitants of the southern coast appear to carry on more extensive commerce than those on the northern shore. During the N.E. monsoons, canoes occasionally start hence for the islands of Teressa, Bampoka, and Chowry. Wilkinson himself once visited these islands in the barque

Cecilia of Moulmein, with the view of fetching cocoa-nuts. The natives of Teressa, however, showed such determined hostility to the captain of the vessel, that Wilkinson advised him to abandon the island without further delay, ere the intended shipment of cocoa-nuts was completed.

Another English captain, named Iselwood, seems once to have carried over some natives of Teressa to Kar-Nicobar, and afterwards taken them back again. There does not exist, however, any regular commercial intercourse between Kar-Nicobar and the remaining islands of the Archipelago. The boats of the natives are much too small, and unsuitable to admit of their undertaking voyages to any distance, unless for some very important purpose, such, for instance, as bringing pottery ware from the island of Chowry, or Chowra, where alone in the Archipelago that manufacture is carried on.

The Frenchman, Tigard, affirmed that the natives constantly spoke of another race of men inhabiting the interior, who have but one eye in the middle of the forehead, who possess no fixed habitation, but pass the night among the trees like wild beasts, and subsist upon fruits and roots dug up in the forest. This superstition meets with the more ready acceptance among the natives, as not one of them has ever penetrated into the interior. All their villages lie along the shore, as far as the tract of coral sand reaches and the cocoa-nut is thriving. Here the frugal native finds all that is necessary to satisfy his very limited requirements. The cocoa-palm and

the screw-pine (*Pandanus odoratissima*), whose fruit forms his chief article of food, as also the betel-shrub and the Areca palm, which furnish their cherished masticatory, grow here, and the coral sand, which can be worked into the most excellent lime for building purposes, is only used by them for the purpose of obtaining that ingredient so prejudicial to the teeth, which serves to impart to the betel the proper relish.

From a passing observation of Wilkinson's we gathered that occasionally, during the S.W. monsoons, earthquakes are experienced at Kar-Nicobar, and this volcanic indication is yet more strongly marked on the adjoining island of Bampoka. Despite the almost stifling heat, which raised the column of mercury to 99° in the shade, some of the members of the expedition endeavoured to penetrate, with indescribable toil, into the swampy forest tract along the shore, and eventually succeeded in bringing back several objects which, though few in number, were of the utmost importance, and well repaid their labour. Among the animals knocked over, there was a gigantic bat, or flying Maki (*Pterops*), the native name of which is *Daiahm*.

A foot-track led direct through the forest, cutting off the southern corner of the island towards the western side. The natives had in vain endeavoured, with their customary importunities, to deter us from following this path, assuring us that we should land ourselves in the thick of the jungle, which was full of poisonous serpents. However, nothing would serve us but to penetrate for once a little deeper into the

forest. A youthful native, of the most elegant and symmetrical proportions, followed us at a long interval, but disappeared finally in the woods. We wandered along in deep shadow between lofty colossal banyan trees with hundreds of stems, and trunks interlaced with enormous branches of ivy, from whose summits hung down lianas of all sizes and dimensions, by which one might have clambered to the top as though by a rope, between trees with smooth and glossy, or scarred and rugged, bark, which were thickly overgrown with parasitical plants. Enormous crabs, with fiery red claws, and bodies of the most lovely blue-black, fled before us to their lurking places in the depth of the forest. On right and left amid the parched foliage was heard the rustling of lizards, and from the summits of the imposing forest trees resounded the musical hum of swarms of *cicadæ*, while green and rose-coloured parrots flew shrieking from branch to branch, and from the boughs and tendrils was heard the call of the Mania, or the cooing, murmuring love-note of the great Nicobar wood-pigeon. Gradually the noise of the surf became once more audible, like distant thunder, just where a few cocoa-nut palms and screw pines mingled with the laurel trees around. We had reached the beach again.

The same day, towards 4 P. M., the frigate quitted the south coast of Kar-Nicobar, and steered in a S.S.E. direction towards the little island of Batte-Malve, about twenty-one miles distant, in the neighbourhood of which we kept beating about the whole of the following day, without being able, in

consequence of a stiff breeze and strong contrary current, to approach it sufficiently near for a boat to get to land, and thus enable us to make a more complete examination. Batte-Malve is a small, entirely uninhabited island, some two miles in length, and seems to be of a quadrangular form; the upper portion is thickly wooded; the highest elevation being from 150 to 200 feet. Towards the N.W. the island becomes somewhat flattened when approaching the coast, whereas on the west side, as also on the S. and S.E. shores, the rocks descend perpendicularly into the sea. According to our observations, instituted on the spot, there is in the longitude, as we ascertained it, when compared with that assigned by the officers of the Galatea, a discrepancy of ten nautical miles.

Early on the morning of the 3rd of March, while still to the N.W. of Batte-Malve, but steering a S.E. course, the islands of Teressa, Chowry, and Bampoka became visible at a distance of from eight to ten nautical miles. From the main-mast-head we could also descry further to the eastward the island of Tillangschong, to which we were now proceeding.

Next morning we found ourselves close in with its N.E. promontory. Both wind and weather were highly favourable, the look-out man was stationed upon the fore-top, the lead line on being hove overboard with forty fathoms found no bottom, and the water had the deep blue colour of the open ocean. We were therefore able to approach the shore fearlessly, and accordingly stood in till we were barely 100 feet distant

from the steep octagonal-shaped cliff, which rises like a bastion at the north extremity of the island. We now edged off with the frigate and ran under the lee of the land, coasting along the west side from north to south, never above 150 or 200 feet distant from the shore; so close, in short, that, standing on the deck, it seemed almost possible to stretch out the hand and touch the beetling shore-cliffs, every stone and shrub being perfectly distinguishable. Only a narrow rocky belt overhanging the surf appeared barren of vegetation, the entire island with that exception being covered with dense forest to the very summits, from 400 to 600 feet in height, of the steep, projecting, knob-like eminences. It was a delightful, never-to-be-forgotten sail along this rock-bound coast, the romantic beauties of which passed before us like green dissolving views. The sea was so smooth and peaceful that we seemed to be sailing on a mill-pond. At last we opened a small sandy cove, in which we perceived a few cocoa-nut palms directly opposite. Here the lead promised us good holding ground, and the anchor was accordingly let go.

One of the side-boats conveyed to land the officers entrusted with the astronomical operations, as also the naturalists. Only with the utmost difficulty was it possible to make way through the surf, and get under the lee of a reef, whence it was requisite to make a spring to get ashore. At the spot at which we landed (named by us Morrock's Cove, and according to observation in 8° 32′ 30″ N. and 93° 34′ 10″ E.) the island was almost exclusively clothed with trees and brushwood. Only

close to the shore did any cocoa-nut palms present themselves to the view. Although quite uninhabited at the period of our visit, it was evident, by the traces of abandoned fire-places, split cocoa-nuts, and so forth, that human beings occasionally make this island their abode, albeit the assertion repeated by several writers, that Tillangschong is the Siberia of Nicobar criminals, can only be set down to travellers' tales, or some utter misapprehension of the meaning of the natives. It would seem that the residents in Chowra and Bampoka come to this island from time to time, for the purpose of collecting cocoa-nuts, and the fruit of the *pandanus*. By dint of strenuous exertion we made our way along river courses, which during the rainy season must rush down as most violent torrents, through a thick plantation of screw pines, into the forest proper, which was overgrown with the most majestic representatives of tropical vegetation. To the botanist presented itself a great variety of interesting plants and timber; to the lovers of sport numerous descriptions of birds, and more especially pigeons, in such quantities that the various messes on board ship were amply provided with them.

Sundown saw us returned on board, when the anchor was once more weighed. During the night we got so close in with the north side of the island that, on the following morning, a boat well-manned and carefully equipped was detached with one of the officers, who was instructed to round the northernmost promontory, in order to examine the northern and eastern sides of the island, and rejoin us on its

southern shore. One of the zoologists, conceiving this minor expedition would furnish him with an excellent opportunity for examining some of the lower orders of marine life, attached himself to it. The frigate now put about, and coasted down the west side southwards. Seen from a distance the vegetation seemed quite of a European character. The eminences varied in elevation from 250 to 300 feet. Judging from the direction of the foliage on the trees, the S. W. monsoon seems to commit great ravages. Everywhere along the coast, but more especially on the south side, serpentine cropped out—giving little promise of fertility. At many spots the cocoa-palms disappeared entirely; a circumstance which must ever interfere materially with the settlement of this island by a people to whom the most profuse natural treasures are worthless and unknown, beyond wealth in cocoa-nuts.

Near the southern point we were suddenly alarmed at noticing an alteration in the colour of the sea, which led us to suspect the proximity of a sand bank. Nevertheless a boat, lowered to try for soundings, found no bottom at 45 fathoms. In fact, the water was found to be transfused with an enormous mass of *crustaceæ*, and small brownish filaments of $\frac{1}{48}$ to $\frac{1}{12}$ of an inch in length, occasionally collected into a knot, which rendered it cloudy and muddy, and at once explained a phenomenon at first sight so unexpected. Towards 5 P.M. we passed the southern point of the island, and somewhat later discovered a well-sheltered anchorage on the S. E. side of the island.

Considerable anxiety was felt as the sun went down, since the boat that had been dispatched not only had not rejoined us but was not yet even visible. As soon as darkness had fairly set in, blue lights were burnt on board the frigate, of which the third was at last responded to by the crew of the boat, which had been provided with port-fires for such a contingency. It seemed to be steering for the frigate. Hour after hour, however, flew by without its approaching us, and the rest of our signals remained unanswered. Thus morning broke, and still no boat was visible.

At length, about 7.30 A. M., the anxiously expected little wanderer hove in sight at a little distance, and half an hour later she came alongside all safe. The projected operations had been only partially successful, owing to the extreme difficulty in making a landing. Surprised by nightfall, it was no longer practicable to make out the ten nautical miles at least they were still distant from the frigate, and the scanty crew consequently saw nothing for it but to anchor close in with the shore, and await the light of dawn in the boat. The cause of our later blue lights not being answered, was partly the want of a sufficient supply of signal lights, part having been already expended, and the rest having got damp.

We now steered for Nangkauri harbour. Full in view lay the north shore of the island of Kamorta, and, as we glided smoothly thither over the glassy sea, it loomed gradually nearer; an island of flat-topped hills, which, despite its rank vegetation, had a park-like aspect, consequent on the alterna-

tions of forest and grass-slopes with the white coral beach, crowned with cocoa-palms. Gradually the island of Tringkut came into view, singularly level, and abounding in cocoa-palms and edible sea-slugs (Trepang), lying directly facing the entrance of the harbour-like channel, between Kamorta and Nangkauri. Our course, on which we were being propelled on a beautiful evening by a gentle soft wind which wafted us slowly but surely forwards, was indeed entrancingly delicious. Directly ahead lay the low strand of Tringkut, shimmering whitely under the dark green canopy of foliage, while the long swell, breaking on the coral reefs like glancing walls of foam, sunk away in the distance into the smooth mirror-like sea, which rose and fell almost imperceptibly, as though peacefully breathing. On the left lay Nangkauri, with its forests. On both sides of Kamorta and Nangkauri, huts and villages were visible sprinkled along the shore, from which numerous natives put off in their canoes to the frigate, but presently lay on their oars at a respectful distance, and followed us like a sort of squadron of observation. On the right was visible in mid-channel between Tringkut and Kamorta the solitary rocky island of Tillangschong; the shores of all these islands, and indeed the whole horizon, being lit up with a gorgeous Fata Morgana. The extreme southernmost cliffs of Tillangschong seemed to be suspended entirely in the air. The corners, at which jutted out the coast lines of Tringkut and Kamorta, seen along the horizon of the ocean resembled wedge-shaped incisions into the do-

main of the atmosphere; while the tips of the waves, lashed into foam as they broke upon them, seemed as if dancing in the air. The canoes of the natives were reflected upside down, till the figures seated in them were so enormously lengthened that one could almost fancy they were gigantic 'genii' disporting on the surface of the sea.

As we were sailing along in front of the village of Malacca into the splendid harbour, and just as the lead had almost a moment before marked 23 fathoms, the look-out man suddenly descried a shoal. Notwithstanding the manœuvres that were at once put in execution, it was found impossible to get entirely clear, and the frigate grounded forward of the beam on the port-side. Although it was ebb tide, yet deep water was observable both ahead and astern, and accordingly an effort was made, by running out the guns and laying out a spring for the frigate to haul upon, to get the ship once more afloat, which accordingly speedily proved successful, so that by sundown we were enabled to anchor in good holding ground, opposite the village of Itoe, in the island of Nangkauri.

Here we lay in a calm, tranquil sheet of water, such as we had not fallen in with throughout our voyage hitherto, surrounded by dense forest, from which were heard distinctly, on board ship, the disagreeable shrill sound of innumerable crickets, and the deep coo of the great Nicobar wood-pigeon. Except for these, the most profound stillness reigned. There was not the smallest movement either in sea

or sky. Although on our excursion to Kar-Nicobar we had to endure great heat, it was here that for the first time we experienced in all its discomfort the oppressive, relaxing sultriness of the tropical atmosphere, when saturated with vapour. The thermometer stood pretty regularly at 84° to 86° Fahr., nor was it possible to find any relief by plunging into the water, which was if anything even warmer than the air. Hemmed in on all sides, and with the welcome beneficent sea-breeze frequently ceasing to blow for a week together, it was speedily pronounced a riddle, impossible to be solved, how this harbour came to be once and again selected by German and Danish Missionaries for the purposes of colonization, unless the key to the mystery be found in its secure situation, the exquisite beauty of the mountain landscape, and the numerous clear spots around.

The very morning after our arrival we set out on a small reconnoitring excursion to examine the ground, in order to decide, among so many objects claiming our attention at once, what, considering the brief time at our disposal, we might hope to undertake successfully, and what must once for all be abandoned. Our first visit was to the village of Itoe, which lay directly opposite our frigate's anchorage. The natives had all fled into the forest, only their dogs having remained behind, who saluted us with a tremendous howl. The huts, six or eight in number, had a poor, miserable appearance, and were built close to a cocoa forest, so that there was not the slightest space to move about in be-

tween the huts, the forest, and the luxuriant underwood, so that free circulation of air was entirely prevented. In front of the village a number of Bamboo poles, with large bunches of ribbons waving about from their upper end, were stuck into the water, for the purpose of frightening away the evil spirit or Eewee, and driving him into the sea! In the interior of these few huts built of stakes, and of much inferior construction to those in Kar-Nicobar, was a large number of rudely cut figures of all possible sizes, and every variety of position, suspended by strings, and supplying the most unmistakeable evidence of the superstitions of the natives. We had never seen these kinds of charms against the evil spirit at Kar-Nicobar, nor had even heard them spoken of. Quite close to the huts was the place of interment. At one grave, apparently quite lately used, a large pole was erected, which was adorned with innumerable white and blue stripes waving in the wind, and from which had also been suspended axes, piles, bars, nails, and other tools and implements of labour of the deceased, so that the whole scene much more resembled a rag-shop than a grave heap.

From Itoe we proceeded to the peak of Monghata, on the island of Kamorta, lying just opposite Nangkauri. It was here that, in 1831, Pastor Rosen wished to found the projected settlement. He could hardly have selected a more unsuitable site, since all around is either dense forest or mangrove-swamp. The spots that had been cleared are now overgrown with *Saccharum Konigii* (Lalang grass), of the

height of a man, which usually follows here upon spots that have been once cultivated and are afterwards abandoned, and which, if once taken root, can only with the utmost difficulty be eradicated. From this peak, barely 200 feet in height, it is practicable to descend by a small footpath to the cove of Ulàla, whose shores are entirely overrun with dense impassable mangrove-swamp, and accordingly present a most dreary, gloomy aspect.

Our next excursion was to the village of Enuang or Enong, where lay at anchor, under the British flag, two Malay prahus from Pulo-Penang, manned by Malay crews, and taking in cargoes of ripe cocoa-nuts, edible birds' nests, and sea-slugs, or Trepang. The captain of one of these prahus and the greater number of the crew were laid up with fever. The supercargo, a Chinese named Owi-Bing-Hong, spoke English fluently, and was of the utmost service to us in our communications with the natives. Enuang is larger than Itoe, and has about a dozen huts, but these are one and all half-ruinous, very filthy, and utterly neglected. In all the huts we found numbers of figures, cut in white wood in the very rudest style in various postures, mostly with a threatening, combative expression, intended to drive away the evil spirit, of whom the natives seem to stand in great dread; for it is the universal practice of these islanders to ascribe whatever happens to them to the influence of an evil spirit, and probably also the appearance of the *Novara* in the harbour of Nangkauri was laid to the account of the ill in-

tentions of an Eewee. One constantly sees fruit, tobacco, or betel-leaves, prepared with pearl-lime, strewed in small portions at various spots in the interiors of the huts, or suspended on the bamboo ladders by which they are entered, the object being to propitiate the Eewee in the event of his being hungry on his arrival! In one of the abandoned huts we discovered a figure resembling a cat, rudely carved in wood, before which the natives had placed tobacco and cocoa-nuts; almost all these figures were besmeared with soot, and daubed with some red pigment, and their abdomens hung with long pendent dried palm-leaves.

Not one of the natives at Enuang understood English. Only a couple of old men spoke a few words of Portuguese, of which they were not a little conceited. The Portuguese, in the 17th and 18th centuries, seem to have been the first European nations that had any commercial dealings with the Nicobar islanders. A number of words of their language, all referring to objects of civilization, and but little corrupted from the Portuguese, such for instance as "pang" (for *pan*, the Portuguese for bread), "zapato" (shoe), "cuchillo" (knife), and so forth, are evidences of this. The natives here seemed to us yet more hideous than those of Kar-Nicobar, especially as the everlasting betel-chewing had disfigured their mouths in the most shocking manner. It is however incorrect to allege, as has been the case hitherto, that they avail themselves of a particular substance with which to discolour the teeth, and which it was supposed induced this frightful dis-

tortion of the mouth; it is unquestionably only the abuse of the betel (consisting of Areca-nut, betel-leaves, and coral chalk) which causes these disgusting disfigurements. At this settlement also the women and children had disappeared. Only one native woman, married to a Malay from Pulo-Penang, who was at the moment officiating as cook on board one of the prahus lying at anchor in the bay, had the courage to present herself before us. She was, according to the custom of the Malays, dressed in silk, but bore on her body all the disagreeable traces of her Nicobar origin. She showed no reluctance to talk with us, and, in her somewhat scanty toilette, was the one solitary native woman with whom we found an opportunity of communicating during our entire stay at the various islands.

From Enuang we visited the first settlement of the Moravian Brothers, lying on the small neck of land between Enuang and Malacca, where apparently the amiable Father Hänsel seems to have lived, for whose interesting memoir, narrating his many years' residence upon the Nicobar Islands, we were indebted to the kindness of Dr. Rosen of the Moravian Mission at Genaadendal in South Africa.* At present all is once more thick majestic forest; a marvellous leafy dome, like a green pantheon, encircles and overshadows the scene of the once benevolent activity of the devoted missionary. Only a ruined well and a few brick fragments of what was the oven,

* See Vol. I., p. 240.

lying about, remain to show that a dwelling once stood here. At the well there were a variety of beautiful flowers growing between the stones. The place is still called, as then, Tripjet, or the "Habitation of the Friends." Here in quick succession most of the Brethren died, (no fewer than eleven out of the thirteen,) upon which the mission was transferred to the opposite island of Kamorta, first of all to the clearing at Kalaha, and ultimately to Kamút. But all these sites were as ill-selected as the first. An abode located between swamp and forest, of which latter only a space of barely 1000 feet in circumference was cleared, could not but prove fatal in a very short space of time to the unfortunate colonists. At the village of Enuang too it would seem to be that the last attempt at founding a settlement was made in 1835 by the two French missionaries; at least we were informed by several natives, who seemed to be at present about 34 to 36 years of age, that they were themselves but boys when the last missionaries lived at Nangkauri. They also further recollected that the gigantic cocoa-palms, which at present skirt the forest, were at that time quite small saplings, and the only vegetation between the beach and the mission house. At present enormous roots are stretching over the foundations of the earlier settlement. The natives who accompanied us spoke with warm feeling of the missionaries, and seemed to regret their departure. Many professed themselves with much earnestness to be Christians, but they were so only in name. According to what they reported, many natives must at that

period have been baptized in the islands of Chowra and Bampoka.

During this visit to Enuang and Malacca, it had been one of the objects aimed at by the members of the Expedition to draw up a small vocabulary of the language of the natives, when it speedily appeared that, despite the proximity of the two islands, the dialects used by the inhabitants were entirely different. Even for trees and plants, for the feathered inhabitants of the forests, as well as domestic animals, the inhabitants of the central groups of islands have different names. The cocoa-palm and its noble fruit, the betel and its ingredients, are here known by entirely different names. The accurate transcription of each individual word into German as pronounced by the native was hard work. It took us two days to make a vocabulary of one hundred words! And even this slight success would have been impossible but for our serviceable Chinese friend, Bing-Hong, who had gone to school for two years at Pulo-Penang, and could read and write English with tolerable readiness and accuracy. The distortion of their mouths is one main reason why the natives pronounce the greater number of their words almost unintelligibly; it is more a lisping mutter than a language. Hence, apparently, their ability to follow out the concatenation of ideas is so slightly developed, that it is only with much difficulty they can be made to comprehend the particular subject respecting which the information was wanted. For example, if it was wished to know the word in their language which expressed

"*blue*," and in order to make more intelligible what was required, a variety of objects of a blue colour were pointed out, they almost invariably named the object itself, and not the colour. Or again, one wanted to know what they called "*leaf*" in their language, and indicated the leaf of a tree standing near; the native, however, replies by giving the name of the tree *itself*, instead of the word expressing leaf. It seems to us not unimportant to call attention to this circumstance, in order more completely to lay before the reader the great and manifold obstacles which present themselves in drawing up vocabularies of the languages of half-savage races, and thus more readily secure indulgence for the discrepancies which are frequently to be met with in such works.*

Bing-Hong invited us to pay him a visit on board his vessel, which had already been lying for several months at anchor in Nangkauri harbour, taking in a cargo of ripe cocoa-nuts, of which a *Picul*, or 133⅓ pounds, is worth in the Pulo-Penang market 5½ American dollars (£1 3*s*. sterling). This hospitable Chinese informed us it was at the period of our visit the least unhealthy season in Nangkauri harbour: that as soon as the S.W. monsoon sets in, all foreign ships hurry away, through dread of the illnesses that follow in its track. However, feverish attacks are of daily occurrence throughout the

* This vocabulary, which probably will not be found altogether valueless for the purposes of comparative philology, as also for the assistance of future travellers, will appear at the end of this volume as an Appendix.

year. Of the thirteen men who formed the crew of the barque, ten were laid up with fever. The disorderly habits of life, however, of foreign visitors are much more to blame for these frequent attacks of disease than the unhealthiness of the climate. Constantly they are guilty of excesses in diet and general negligence of health, bathing during the utmost heat of the day without any covering to the head, exposing themselves to the burning rays of the noonday sun, drinking for the most part nothing but the fluid contents of the unripe cocoa-nut, eating quantities of juicy fruits, the constant use of which acts injuriously on the systems of strangers, and sleeping on the damp soil under the open air, exposed to all the noxious influences of the atmosphere of a tropical forest without the slightest shelter. Bing-Hong showed us the dried edible nests of the *Hirundo esculenta* (in Malay *Salang*, in Nicobar *Hegái*), and presented us with a small packet of about thirty nests. When properly dried, seventy-two of these tiny nests weigh one catty, or $1\frac{1}{4}$ lb., and they are sold at two rupees (4*s.*) for three of the inferior sort. The best quality is far more expensive. We caused some of these Chinese dainties to be prepared exactly as prescribed by Bing-Hong, that is to say, they were boiled for one hour in hot water, but we found the gelatinous mass quite tasteless, and, in fact, resembling dissolved gum. The swallow which constructs these edible nests does not however seem to be a regular visitant of the Nicobar Islands, and the profits on this article of commerce, which is of such importance in Java and

the rest of the Sunda Islands, are here scarcely worth naming.

It has been long disputed whence this industrious little warbler obtains the material for his nest, and it was in all probability the circumstance that it was generally believed to consist of particles of sea-weed, fish-roe, and marine animalculæ of the *medusa* class, which secured for these nests such a celebrity among Chinese gourmands. A German naturalist, Professor Troschel of Bonn, affirms however, on the strength of an analysis of these nests, that the notion hitherto prevalent as to the component parts of these nests is entirely erroneous, as they consist of nothing else than a thick, glutinous slime, secreted from the salivary glands, which, at the period when the Indian swallow builds its nest, swell out into large whitish masses. This slime, which is susceptible of being drawn out in long filaments from the bill of the animal, is quite analogous to gum Arabic. Whenever the bird is desirous of constructing its nest, it causes this salivary substance, which at that period is copiously secreted, to adhere to the crags, till its elegant nest is finished.

One of the days during which the frigate lay in Nangkauri harbour, the geologist of the Expedition made an excursion in a native canoe along the coasts of Kamorta and Tringkut, as these islands at the points where the shores are precipitous furnish the only possible geognostic facilities, the forest or the thick covering of vegetation in the interior of the island quite concealing the geological conformation. Our Chinese

friend Bing-Hong aforesaid accompanied him in the capacity of interpreter. When the geologist had got some distance from the frigate, he found that the natives had not abandoned their villages, and to this one alone of our fellow-travellers, manned and rowed along by natives, did some of the women become visible. They were as tall as the men, and quite as loathsome in appearance, the mouth similarly disfigured by betel-chewing, but the hair cut short. Around the body they wore a petticoat of red or blue cloth, reaching from the loins to the knee.

Another excursion was made to Ulàla Cove, distant about four nautical miles from our anchorage on the W. side of the island of Kamorta, on which occasion our Venetian gondola, specially constructed for similar expeditions, was pressed into the service. The entrance to the cove is about ¾ of a mile in breadth, after which it expands in an easterly direction with varying width, at the same time sending off arms in every direction. The vegetation is exceedingly luxuriant and plentiful, and along the swampy shore consists mainly of mangrove bushes, which at most points make it almost impracticable to disembark, and impart to the entire bay a dreary, desolate appearance. At the few villages scattered along the shore, most of the natives had taken to flight. On this occasion, however, it was not child-like terror that had driven them away, but an evil conscience, for among the other inhabitants this bay enjoys the sad reputation of having on various occasions massacred the crews of small vessels,

after having plundered them of everything. So strong is this feeling that the natives of the rest of the Nicobar group, according to their own report, refuse to have anything to do with this ferocious set, and could not by any means be induced to accompany us in their canoes as far as Ulàla Cove.

The frigate lay five days in Nangkauri harbour, until the soundings and general survey of this large bay with its numerous branches had been completed, when, on the morning of the 11th March, she sailed, with a fresh breeze from N.W., through the western entrance, which is scarcely a hundred fathoms wide, by fourteen in depth, and is marked by two rocky pinnacles. Directly opposite lies the island of Katchal, thickly wooded to the water-edge, and stretching out long and low, without any marked elevation above sea-level. We now sailed in between these islands of Katchal and Kamorta in a northerly direction towards the islands of Teressa and Bampoka. On the W. side of Kamorta a number of villages were visible; on the N.W. we perceived at several spots natural meadows, while hereabouts the land gradually culminated into the highest point of the island,—a conical hill, rising not very far from the shore, almost entirely without trees, except where near the summit a number of bushes and shrubs nestled in a sort of hollow. Three days were now lost in unsuccessful attempts to make head-way against wind and tide, so that for four mortal days we were tossed about in full view of Bampoka, Teressa, and Chowra, never indeed above twenty miles distant, yet utterly unable to

make any one of them. As the time at our disposal for visiting these was exhausted in consequence of this unexpected difficulty, we were, very much to our regret, compelled to forego the satisfaction of setting foot on either of these islands, which, especially Chowra, would have presented a rare opportunity of examining the effect upon tropical races of men of an excess of population. That rather barren island possesses, it seems, more inhabitants than it has the means of subsisting, and appears to be the only spot of the entire Nicobar group where the natives follow industrial avocations. All manner of pottery ware comes from Chowra, so that it would almost seem as though the lamentable spectacle of a superabundant population had given the natives the first impulse towards active industry.

In the island of Teressa the Austrian Expedition had a more special interest, in so far as it is by no means improbable that the adventurous Bolts, who in 1778 visited the Nicobar Archipelago in the Austrian ship *Joseph and Theresa*, named this island, as he already had done in the case of a fort on the coast of Africa, after the renowned Austrian Empress, which, corrupted by the native dialect, had been gradually transformed into Teressa or Terassa.

At sunrise on the 17th March there loomed on the horizon in a S.E. direction, first the island of Meroe, than the two small islands of Treis and Track, and lastly the long mountain-chain of Little Nicobar, with the beautiful island of Pulo Milù. The breeze was light, and a current of a velocity

of five miles an hour, which ran rushing and seething like a mill-race through the calm sea, so completely checked our progress that the anchor had to be let go. This procured us the very unexpected pleasure of visiting these two small wooded islands. Owing to the heavy surf, we only succeeded in effecting a landing by the assistance of some natives, whom we happened to fall in with in their canoes off these all but uninhabited islets. Treis is a veritable pigeon island, full of the most various and beautiful species of that bird; nevertheless we could only procure a single specimen of the exceedingly elegant Nicobar dove. Here too it was that the geologist found the first traces of brown coal, which however did not present itself in layers suitable for domestic use.

The same afternoon, with the turn of the tide the current set in our favour, and towards 10 P. M. we reached the roadstead protected to the eastward by the northernmost point of Little Nicobar, to the westward by the island of Pulo Milù, and southward by the main-land of Little Nicobar itself. It is not very large, but it has excellent holding ground, and would be available at all seasons as a harbour of refuge for vessels. As most of the villages of Little Nicobar lie on the N.W. and S. sides of the island, and were with difficulty accessible from our anchorage, it was thought preferable to select the small but beautiful island of Pulo Milù for our visit. Already, while we were lying at anchor in front of the island of Treis, a few natives had come on board the

frigate, and had shown much confidence. They possessed all the characteristics of the residents of Nangkauri, and they also spoke, with but slight variations, the same idiom. Only for certain objects, and those, singular to say, articles of the very first necessity, such as cocoa-nut trees, palms, screw-pines, and the like, did they employ different expressions.

The island of Pulo Milù, with its variety of forest-vegetation, and its charming woodland-scenery, displays all the beauty and all the marvels of the tropics. The screw-pine (of the family of *Pandaneæ*), that peculiar tree which imparts to the forests of Asia a character so different from those of America, is seen here in exceptional size and majesty. Nowhere have we met with this marvellous tree growing in such luxuriance as on Pulo Milù, where it appears in such quantities as to resemble a forest, and leaves an impression of such lonely wildness as makes one almost imagine it a remnant of some earlier period of our earth. Wondering at the capricious vagaries of nature, the traveller contemplates these extraordinary trees, which have leaves arranged in spiral order like the dragon trees, trunks like those of palms, boughs like those trees presenting the ordinary characteristics of foliage, fruit-cones like the *coniferæ*, and yet have nothing in common with all these plants, so that they form a family by themselves. On Pulo Milù we saw some of these trees with slim smooth stems 40 or 50 feet in height, which are nourished by and supported upon a pile of roots of 10 to 12 feet high, resembling a neatly-finished conical piece of wicker-

work, composed of spindle-shaped staves. Many of these roots do not reach the soil, and in this undeveloped state these atmospheric roots assume the most peculiar shapes. Higher up the same formation is repeated among the branches, from which depend beautiful massy fruit-cones, a foot and a half in length, by one in thickness, which, when ripe, are of a splendid orange hue.

The screw-pine is not cultivated in the Nicobar Islands; it grows wild in the utmost luxuriance, and, after the cocoa-nut, is for the natives the most important plant that furnishes them with subsistence. The immense fruit-cones borne by this tree consist of several single wedge-shaped fruits, which when raw are uneatable, but boiled in water, and subjected to pressure, give out a sort of mealy mass, the "Melori" of the Portuguese, and called by the natives "Larohm," which is also occasionally used with the fleshy interior of the ripe fruit, and forms the daily bread of the islanders. The flavour of the mass thus prepared strongly resembles that of apple-marmalade, and is by no means unpalatable to Europeans. The woody, brush-like fibres of the fruit which remain behind, after the mealy contents have been squeezed out, are made use of by the natives as natural brooms and brushes, while the dried leaves of the Pandanus serve instead of paper to surround their cigarettes.

At Pulo Milù, as is yet more markedly the case among the southernmost islands, the cocoa-palm does not grow so luxuriantly as on Kar-Nicobar, and to this circumstance may

be chiefly ascribed the fact that the natives are not so liberal as at the last-named island. The Swedish naturalist, Dr. Rink, who has so largely and valuably added to our stock of information respecting the Nicobar group, resided here for a considerable time with some forty Chinese labourers, and, with a view to ultimate colonization, had caused to be cut through the forest several paths, by means of which this island has been rendered much more permeable than any other in the Archipelago. The selection was an extremely happy one, and had the projected colonization of the island been carried into effect, very different results would have been obtained than those of poor Dr. Rosen in Nangkauri Harbour. Next to Kar-Nicobar, it has been clearly decided that Pulo Milù is the most suitable spot for a first settlement, in the event of any European power or any capitalist undertaking to solve the problem of colonizing this Archipelago.

In the cove at which we landed five huts stand upon the beach, much similar to those at Nangkauri, and like them having before them a number of lofty singularly ornamented poles emerging from the water, called by the natives Handschúop, and intended to keep Davy Jones at a respectful distance from the village,—not unlike the scarecrow with which we at home seek to frighten from the ripening corn the rapacious troop of feathered epicures. These banners for scaring away the Eewees are erected within the sea limit by the Manluéna, or exorcist, who in these islands, like the

medicine man of the Red Indian of America, or the Ach-Itz of the Indian races among the highlands of Guatemala, exercises the utmost influence over all the affairs of life. Here, as elsewhere, most of the natives had disappeared on our approach. We found but five men, who were all at least partially clad; some wore shirts, trowsers, and caps; another had enveloped his person in an immense, and by no means over-clean, piece of linen. One of this number, who acted as our guide through the island, and called himself "John Bull," was not a regular resident in Pulo Milù, but in Lesser-Nicobar, and had only come over to the island for the purpose of constructing canoes of trunks of trees hollowed out. He spoke English with tolerable fluency, and displayed quite child-like satisfaction, as often as any English word, no matter what, was recalled to his recollection, which had slipped his memory from want of practice. John Bull soon became very insinuating, and expressed a wish to accompany us to Great Nicobar, where, as he assured us, at Hinkvala, one of the villages on the southern shore, he had several relatives, among others one named "London," who could be of the utmost service to us. For his kind offices we promised him a present, upon which he asked with the most naïve simplicity: "You not talk lie?" from which we may conjecture that not every promise made to him by a stranger was duly fulfilled. The huts of the natives were constructed of beams, exactly like those in the central island; and the internal arrangements were precisely identical. Here also

are figures sculptured in wood, Eewee-charms, which especially are found in the interiors of the houses in such numbers and in such quaint costumes, that one is almost tempted to imagine the inhabitants of these huts must be proprietors of some Marionette-theatre. We also found here various objects carved in soft wood, among others a large serpent, a tortoise, and several droll figures, as also a seven-holed flute of bamboo-reed, the model for which had evidently been supplied by some of the Malay sailors from Pulo Penang.

The same evening we weighed anchor, and shaped our course along the eastern shore of Lesser-Nicobar, which is thickly covered with swamp and forest. On the morning of 19th March, we were abreast of the island of Montial in St George's Channel, and by evening had anchored on the northern side of Great Nicobar, S.E. of the island of Kondul, which also lies in the Channel. Already before sunrise the boats were lowered and everything got in readiness for a visit to the small but delightful island of Kondul, which, though on the N.W. side so lofty and rocky as to be almost inaccessible, presents on its E. side a tolerably secure landing-place, situated according to our observations in 7° 12′ 17″ N. and 93° 39′ 57″ E. Here we found a number of huts, but not one single native was visible. We now endeavoured, by following up a torrent bed, to climb to the highest point of the island, which has an elevation of 350 to 400 feet. In this we only succeeded after most severe exertion, occasionally having to avail ourselves at the steepest parts of the ascent

of the gigantic roots of trees, or of the climbing plants that hung suspended like natural ropes, by means of which we swung ourselves among the huge blocks of rock, till we could gain a secure footing. Instead, however, of finding, as we had hoped, a small *plateau* at the summit, or at all events discovering some less difficult path by which to descend, we were sorely disconcerted, on arriving thoroughly exhausted on the top, at finding the rock descended so sheer and precipitous on the other side that it was impossible to make one step further. However, we found here a delicious refreshing breeze. With pleasure indescribable, our gaze wandered to the island of Great Nicobar and the islet of Cabra, lying immediately opposite us, their green luxuriant shores bathed on all sides by the azure ripple of the ocean. Although no rain had fallen for more than six months, the vegetation was on the whole wonderfully fresh and abundant, the forest lovely and majestic as on "the first day of Creation!"

We found ourselves compelled to retrace our steps by the same break-neck path by which we had ascended the peak. On the shore we encountered some of the natives, whose curiosity had got the better of their apprehensions, and who now slunk out of the forest, to discover what was our peculiar object in landing on the island. Among their number was a native doctor, and Eewee exorciser; he was however in no way distinguishable from the rest of his brethren, unless by the inordinate length of his hair, which flowed down far below his shoulders. One of the members of the Commission,

desirous of getting at the treatment pursued by these sly knaves when they go to work with their poor credulous dupes of patients, promised this dusky disciple of Æsculapius a present, if he would cure him by his own method, and affected to have an intolerably severe pain in the left arm. The Manluéna displayed his treatment with a vengeance; he laid hold of the supposed sufferer by the arm, which he pinched and punched, till there was not a spot that had not received his attentions, while during the entire process he now screamed aloud, now whistled, now blew vigorously upon the bare skin, as though endeavouring to expel the Evil Spirit. According to the belief of these poor people, every bodily pain is nothing other than a demon magically introduced into the system through the evil influence of an Eewee. The Manluéna commenced to pinch the arm from above, performing this anything but agreeable manipulation with his hands lubricated with cocoa-nut oil, from above downwards, the object being to drive out the Eewee from the arm by the finger points! Although the doctor had not used his patient very tenderly, he nevertheless in the opinion of the natives had not appeared to put forth all his powers, and had made use of far fewer noises and contortions than had been usual with him when one of themselves was undergoing treatment. Moreover his original confidence seemed to fail him in his anxiety lest some mischance should befall him in case this attempt at a cure should miscarry, and accordingly he speedily made off, after he had been complimented with a

few threepenny bits for his trouble, nor did he again make his appearance the whole day.

Some of the members of the Expedition had resolved to ramble quite round the island, the circumference of which is little if at all more than eight English miles. At early morning they had started with their guns and botanical boxes on their shoulders full of the most buoyant expectation of securing an ample store of curiosities, starting from the east coast and thence to the north side of the island; and towards sunset they made their appearance at the south side, foot-sore and nearly exhausted. In the ardour of the chase and of collecting "specimens," they had plunged so deep into the forest, thereby losing all trace of the direction by which they had entered, that as the sun was already beginning to descend, they had no alternative but to hew a path with their hatchets through the thickest of the forest, so as to reach the beach once more. At times hanging by creepers, at others swimming at various spots where the rocks dipped perpendicularly into the sea, they at length arrived at the spot where we were re-embarking, hungry, thirsty, and in a state of such extreme exhaustion that we at first were really apprehensive for their lives. Singularly enough these severe hardships were followed by no evil consequences to any one of the party, though the recollection of them will surely not fade out of their memory for the rest of their lives.

The 21st March, being a Sunday, was duly observed, and was kept as a much-needed day of rest, no boat going to shore. To-

wards noon a pretty smart shower of rain fell, the first for six months. Several of the natives came off in their canoes, and brought fowls, eggs, cocoa-nuts, and various other fruits, as also monkeys and parrots. Rupees, English shillings and sixpences, were evidently not unknown to them, as they greatly preferred these in exchange to mere toys and showy articles.

On the 22nd we made an excursion to a bay on the island of Great Nicobar or Sambelong. All that portion of the coast lying opposite our anchorage was quite uninhabited, evidently in consequence of the entire absence at this point of the cocoa-palm, whereas on the west coast there are several good-sized villages. Unfortunately, however, these lay at far too great a distance from the frigate to permit of an excursion being made thither. As our boat, after an hour's rowing, approached the little bay, we perceived at the mouth of a small creek the singular spectacle of a dead mangrove forest. Some great storm had apparently thrown up a sand-drive here, so as to cut off the supply of sea-water even at full tide. As the mangrove only flourishes in salt or brackish water, it had thus been deprived of its vital element, and the trees had accordingly perished in the fresh water. But the lofty stems still stood, withered and blighted, a ghastly garden of death amidst delicious green peaks covered with forest. As the sun rose, a white vapour lay like a winding-sheet over the dead swamp: one felt the uncomfortable sensation of being in a place where miasmata were poisoning the air, while the soil was generating death. The rigid skeletons of these trees recall

to the recollection of the stranger, who stands marvelling at the all-powerful energies of Nature to create and destroy in these regions, how many corpses of his fellow-Europeans are mouldering beneath the damp soil of this island! Fortunately the river has once more broken through the bar, and given access to the sea-water, so that beneath the dead forest a fresh green vegetation was fast springing up.

The crew of a Malay prahu from Penang had selected this dull spot for a regular settlement, in order to collect ripe cocoa-nuts, and Trepang, the edible sea-slug (*Holothuria*) already mentioned, the latter for the Chinese market. These people occupied a large wooden shed, and were provisioned for a somewhat long stay. Except this shed there was not one single hut here, all around being nothing but dense forest and swamp; but some natives of the island of Kondul came over in their canoes to trade hens and eggs with us. The Malay vessels which visit these islands almost all come hither from Penang, about the beginning of the N.E. monsoon, and remain during the whole of the dry season, so as to take in a full cargo of the various natural produce of the island. They bring for barter fine Chinese tobacco, calico, knives, axes, hatchets, cutlasses, clothes, and black round hats. In former years they also imported the betel shrub into Great Nicobar for propagation; where, in fact, it has been planted, and has since then increased to such an extent that its importation is no longer remunerative. With the commencement of the S.W. monsoons and the rainy season, the Malay

traders with their profitable cargoes make their way back to Penang, and the other places along the coast of the peninsula of Malacca. Thanks to the presence of these people, the members of the Expedition were enabled to compare the Nicobar idiom with that of the Malays, and could thus ascertain the exceeding discrepancies between these two languages.* These merchants ordinarily bring with them a few individuals who have a slight knowledge of the Nicobar language, as the Malay tongue is not understood anywhere in this archipelago.

One of the Malay seamen, named Tschingi, from Penang, whose caste was indicated by the long stripes of a bluish green colour painted upon his dark brown forehead, peculiar to the Hindu god Siva, told us that he recollected being employed as a boy in the service of Pastor Rosen on the island of Kamorta, with whom he remained till his return to Europe. He spoke with much admiration of that estimable and thoroughly deserving gentleman, and remarked that many Chinese and other settlers had accompanied him to Kamorta, all of whom speedily succumbed to the fever.

The native known as John Bull, who had followed us hither from Pulo Milù, made his appearance at the bay, accompanied by some of his kindred, and brought us some provisions. He seemed firmly to believe that in the interior of the island of Sambelong, in its southern part, there existed some wild inhabitants of a different race, Baju-oal-Tschùa (or junglemen, as he called them), who lived entirely in the

* See Appendix.

woods, in small huts erected upon the banks of the streams, and were so timid that they took to flight so soon as any one endeavoured to approach them. He also told us that in the S. and S.W. sides of Sambelong there were eleven villages: viz. Hinkóata, Changanhéi, Hinháha, Haenganglóeh, Kanálla, Taéingha, Dayák, Kanchingtong, Dagoák, Hinláwua, and Kalémma.

In the course of the day, not only was a highly successful onslaught made on the denizens of the woodland, but even the fishes in bay were not exempted from our attentions;—a net, which was flung over the side and retained there barely half an hour, being hauled ashore with upwards of a hundred weight of small fish. Of this the entire ship's company partook, and sufficient was left over for the next day. Our quarry in the swamps and forest consisted of snipes, of a splendidly plumed Maina bird (*Gracula Indica*), eagles, and apes; unfortunately a number of the animals shot were lost by their retreating into the thicket, where they could not be recovered.

On the morning of the 23rd of March the frigate again made sail and steered along the west coast of Great Nicobar, while two boats' crews were despatched with the requisite instruments to examine this quite unexplored coast. This plan, however, proved only half successful. The tremendous surf, into which the long swell setting in from the S.W. is broken hereabouts, hurled the larger boat upon the beach with such violence that it was capsized, by which a great portion of her freight was utterly lost, and her crew could only

escape to shore by swimming. The smaller, or jolly-boat, returned to the ship with two of her crew to fetch assistance for these woe-begone wights. One of the latter, who coolly spoke of the accident as a "*piccola disgrazietta*,"* with the same breath informed us that almost all the instruments, note-books, and implements of the chase which had been taken on board, were irretrievably gone. Another quarter-boat was despatched to bring off our shipwrecked companions, who meanwhile remained on the shore in anything but enviable plight, soaked to the skin, hungry and thirsty, and busily employed in fishing up some few of the articles that had been overturned into the water. At last both boats got safely back in company about midnight, but under such circumstances that it was out of the question to think of prosecuting the examination that had been commenced. We now lay a course for the southern bay of Great Nicobar, where, shortly after 9 P.M. of the 24th March, we cast anchor near the little stream called "Galatea" by the Danish expedition. The midshipman intrusted with the commission of selecting the most suitable spot to disembark, returned after several hours' absence, with the little consolatory intelligence, that along the entire reach of coast which he had examined, there was but one solitary spot at which it was possible to land without danger from a boat of European construction. In the course of the day we received numbers of natives on board; among the rest, one man

* Most of the Austrian sailors are from the Adriatic coast, and accordingly speak an Italian patois.

still young, with immense spectacles, which undoubtedly were worn much more for personal adornment than for use. They brought off for sale a few apes, parrots, hens, swine, cocoa-nuts, as also some rosin, tortoise-shell, amber, and a few large eggs of a species of wood-pigeon, called by the natives Mekéni, of which unfortunately we did not succeed in seeing a single specimen, despite our utmost exertions.

The following morning, 26th March, amid occasional premonitory symptoms of the approach of the rainy season, the naturalists and some officers endeavoured to effect a landing at a place where alone it seemed possible for the broad, clumsy boats of our western waters. In this we succeeded. Again we were able, although drenched to the skin, to set foot on Nicobar soil. It was for the last time we did so. Not a single vestige could be discerned along the beach of any human habitations:—all was thick tropical forest, fringed with enormous *Barringtoniæ Giganteæ*, which in all their primeval weirdness flung their branches over the water, interlaced in wild confusion. After half an hour's wandering along the hot beach, we came unexpectedly, at a point somewhat south of our point of disembarkation, upon a couple of wretched disconsolate-looking huts. Not a human being was visible,—only a pair of hens and a pig, which were parading about untended; the bamboo poles, which usually figure in front of the native huts, had been carried away. However, in their absence it did not cost us much trouble to penetrate into the interior. A few weapons of war or the chase, a number of

hollowed-out perfumed cocoa-nut shells suspended above the fire-place, a pair of elegantly-plaited baskets, a boat's sail made of pandanus leaves, some straw mats, and a couple of marvellously finished figures, formed the very miscellaneous inventory of this Nicobar household. The figures (cut in wood) and a very neatly-executed basket attracted to themselves our special attention as interesting specimens of the industry and taste of the natives of Nicobar. We could not resist possessing ourselves of these, at the same time leaving in recompense a quantity of shining six-penny pieces, fully twenty times the utmost possible value of what had been taken away, depositing them in one of the baskets which was suspended in a conspicuous position in the middle of the hut.

Adjoining this hamlet was a forest of cocoa-palms. We penetrated into it, and suddenly found ourselves, to our great astonishment, on the track of a well-worn foot-path, which was probably, with the exception of the paths in Great Nicobar and Pulo Milù, in better condition than any other we had hitherto encountered in the Nicobar Islands. What more natural than to suppose that a path so well worn must necessarily lead to an important settlement? It passed first through an extensive and splendid palm-plantation, and afterwards through a very beautiful clump of leafy trees, fringing a little brook, whose channel, it being then the end of the dry season, was quite dried up. Frequently we were obliged to clamber over steep blocks of rock, with footsteps hewn in them by the hand of man, for facilitating the passage, and at

last, after a scramble of several hours, highly interesting, but exceedingly fatiguing, we reached a cleared spot on the sea-beach, but without being able to discern the remotest trace of any human habitations. On the contrary, it seemed to admit of no doubt that this path, as also some spots that had been cleared, were nothing but the preparations for an intended settlement, which can only be successfully carried out here where the cocoa-palm and screw-pine have first struck root. Some of the sailors, who accompanied us as porters and escort, went forward as far as the extreme point of the bay, but there also they found no trace of any human abode. After a brief rest we returned by the same track, to the spot at which we had disembarked, where we were joined by some of the officers, who, more fortunate than ourselves, had encountered some of the natives, and had even seen them in their dwellings. They spoke of the interiors of the huts they visited as being quite as wretched as those on the other islands, only the inhabitants did not seem so shy or timorous. Far from this, they had regaled our lucky companions with palm-wine, and had accompanied them till they fell in with us. With this visit ended the thirty-second day of our stay in the Nicobar Archipelago, only one half of that period having been spent on land, the rest having been occupied in beating about against unfavourable winds.

Before, however, we take our departure from this most interesting group of islands, *en route* for the Sunda Islands and China, we shall be excused for briefly recapitulating the

main results of our observations and investigations, while referring the reader for a more detailed specification of our labours to the various special divisions yet to appear.

The Nicobar Islands, situated right in the most important highway of commerce, which is destined to acquire yet greater importance, so soon as the projected opening of the Suez Canal has been carried out, and extending in their general direction from S.S.E. to N.N.W., seem like an extension of the main central mountain-chain of Sumatra, which is prolonged yet further to the northward through the Andaman group, and in its crescent-shaped arrangement, with the convexity towards the westward, corresponds with Cape Negrais in the peninsula of Malacca. If from this Archipelago, as a centre, a circle be described of about 1200 nautical miles of radius, it will include the most important commercial cities of India, as well as Ceylon, the majority of the Sunda Islands, and Cochin China. The winds usually prevalent here greatly facilitate the passage of vessels from the adjoining islands and coasts of *terra firma*, and proportionately enhance the importance of this Archipelago.

With but few exceptions, the shores of the whole group of islands consist of coral sand, or are fringed with coral banks, which latter extend seaward to a depth of thirty fathoms. In like manner almost all the bays seem to be edged with coral reefs, if indeed they are not actually studded with them. The promontories frequently present cliffs both above and below the level of the ocean, extending a couple of miles into

the sea, which, what with the occasional rapid currents and light breezes, are not always very easily weathered. The prevailing winds are the two monsoons, the N.E. in the months of November, December, January, February, and March, the S.W. in May, June, July, August, and September. During the months of April and October, there are variable winds and calms, extending more or less into the adjoining months. The currents vary in direction with the passages between the islands, and depend upon the ebb and flow of the tide, varying in force and direction with the tidal phenomena. Ordinarily these make themselves felt during the making of the tide from S.W. to N.E., and in a contrary direction during the ebb.

Due south of Kar-Nicobar, we found while lying at anchor a current running $3\frac{1}{2}$ miles an hour, two days after the full moon; north of Little Nicobar, near the small island of Treis, where the current compelled us to anchor, its velocity, as we experienced two days after new moon, is as high as $4\frac{1}{2}$ miles an hour. These observations refer to a period when the velocity of the current was at its maximum. In light winds, and when near the coast, one must always let go the anchor, or at least lay out a kedge, the latter however being barely sufficient at several spots immediately after the full or the new moon. According to observations made during five days about the period of full moon, the course of tide at Kar-Nicobar may be assumed at 9h. 40m., and the difference in height between ebb and flood at five feet.

In these waters, and in a still more marked degree in the latitude of Sumatra, occurs a belt within which the wave-currents form what is known to English navigators as "The Ripples." The sea here is ranged zone-fashion, so to speak, as though in fact in a state of ebullition, and makes a considerable noise, yet without there being anything to indicate an increased strength of current; since, on the contrary, we found when reaching these tracts, that the velocity of current was if anything rather diminished. We conceive this phenomenon may be attributed to the agitation caused by partial tidal currents, crossing each others' course, and occasionally even running counter to each other, as also to certain special conditions of ocean temperature at varying depths. The changes of the tides at points of the coast, proportionally speaking so near each other, are so widely different in point of time, and the height reached by the waves is so little uniform, that any such phenomenon as the above must naturally make itself perceptible at the surface in the open sea.

While the change of tide at Kar-Nicobar takes place every 9h. 40m., that of Cape Diamond in Sumatra is laid down in the English chart at 12h., and on the sandbanks in the Straits of Malacca at only 5h. 30m. The difference in elevation assigned exhibits a similar discrepancy in the estimates; that for Kar-Nicobar being stated at five feet, that for Cape Diamond at 10 feet, and on the sandbanks already mentioned at 15 feet. The hurricanes of the Bay of Bengal never visit the Nicobars; they seem to originate part in or

about the Andaman Islands, part from the west coast of Sumatra, proceeding in the former case towards the northern portions of the gulf, and in the latter towards the Coromandel coast and Ceylon.

During the S.W. monsoon, in which occurs the rainy season, frequent thunder-storms and even gales of wind occur, especially in the vicinity of Great Nicobar. The dry N.E. monsoon again brings fine weather, but sometimes blows with considerable strength.

Kar-Nicobar has no regular harbour, but presents on its north side a spacious land-locked bay nearly rectangular, the holding ground of which is a coral sand of from 10 to 16 fathoms, and is thoroughly sheltered to the S.W. and N.E. During the N.E. monsoon it is advisable to lie somewhat closer in with the northern promontory of the island. At this season it is difficult to find any spot at which small boats can disembark. However, near the northern point it is possible to reach the shore in a small cove, the western boundary of which presents an open space of coral sand, where it is possible to lie to in deep water with even a good-sized boat. The village of Sáoui, which gives its name to the roadstead, is not readily accessible during the N.E. monsoon in consequence of the surf, but the very next indentation of the coast facing eastwards, which is protected seaward by a coral-reef, offers a well-sheltered point of disembarkation, where the boats can be beached on the smooth coral sand, and thereafter drawn up high and dry.

During the N.E. monsoon it is also practicable to avail oneself of the bay on the S. side of Kar-Nicobar, or to anchor anywhere along the W. side of the island, but such anchorages possess no other protection than is afforded by long points of land projecting far into the ocean, and usually protracted by coral-reefs.

Both in the bay of Sáoui, and on the south side of Kar-Nicobar, are found small brooks, which run with water even during the dry season. It is difficult however to water hereabouts, because these rivulets are blocked up with sand-bars, not to speak of the obstacles interposed to the landing of boats, by the tremendous surf and the low swampy shore at most periods of the year. In cases of extreme necessity, however, the little rivulet called the Areca might with some difficulty be made available.

Chowra, Kamorta, and Bampoka, have no regular anchorages; a vessel must be content to ride to leeward of that coast, which will act as a shelter against whichever monsoon happens to be blowing. Disembarkation by means of boats is extremely difficult, and it is much better to make use of a native canoe, which, after transporting the visitor through the surf to the land, can be more easily drawn up on the beach.

Tillangschong possesses a beautiful harbour on the S. side, which however is open to the S.E., but during the greater part of the year affords an excellent anchorage. The most southerly point has numerous cliffs and needles of rock where it projects into the sea, but it is possible to approach

within a few fathoms of the southernmost of these with vessels of any size.

On the west side of the island, at the spot where its two halves may be said to blend, the northernmost rugged, the more southerly flat, a pretty good anchorage will be found, which seems to be sheltered towards the S.W. by several solitary projecting rocks. Generally speaking, but more especially to the N. and E., this island presents a steep precipitous shore, so that, with the exception here and there of a few solitary rocks, close in to the shore, there is nothing but clear deep water around almost the entire island to within about 10 fathoms of the land.

The harbour of Nangkauri is rather roomy, but of very unequal though for the most part considerable depth; the soundings in its midst giving between 20 and 30 fathoms. The promontories are all more or less low-lying, and thickly beset with coral-reefs, and caution is the more necessary, since it is far from unusual after working in from 20 to 16 fathoms, to find the water shoal suddenly to four or even three fathoms. The anchorage formed by the two islands of Kamorta and Nangkauri has two entrances, from the east and from the west, the navigation of which by large ships demands the utmost vigilance. The western entrance is barely a cable's length in width, while the island of Nangkauri has hardly any fair-way for vessels along its exterior coast-line. In consequence of the two islands trending towards each other at that point, the harbour near its middle is greatly

narrowed, so that there may almost be said to be two harbours. In either of them a vessel is quite safe, being in fact so thoroughly sheltered from all winds that the heat is occasionally overpowering.

On the west side of Kamorta, six or seven miles north of the western entrance of the harbour, will be found a large sheet of water, called Ulàla Bay, in the first half of which there is excellent anchorage; but the vapours emanating from the abundant mangrove swamps render residence here extremely unhealthy. As Ulàla Cove runs for the most part parallel with Nangkauri Harbour, and is separated from the latter only by a range of low eminences, the near proximity of these mangrove swamps likewise imparts their baleful influence to the air of Nangkauri Harbour. There is absolutely no water here fit for drinking.

Katchal has large bays on both its west and its east sides, but they are almost entirely silted up with coral sand. The channel between Katchal and Kamorta is clear. Here we made short tacks in passing through, approaching the shores on either side within half a mile.

Little Nicobar has a good harbour on the north side, formed by the island of Pulo Milù and the N. coast of Little Nicobar, which is bent almost at a right angle. This anchorage is accessible in all winds, and is well sheltered, but a considerable portion adjoining the shore of Little Nicobar is rendered useless by banks of coral.

Notwithstanding the most careful examination of this part

of the coast, we could not discover the spot, which in the Danish charts is marked as furnishing water fit for drinking, but perceived nothing save mangrove swamps, with numerous water-courses filled with brackish water, the two largest of which we navigated in our gondola as far as was practicable.

The island of Kondul in St. George's Channel forms another very fair anchorage; and similarly on the N. side of Great Nicobar, one finds several suitable bays, the most easterly of which, called Ganges Harbour, is fringed with coral banks, rendering it proportionately difficult of access. The anchorage of Kondul may be selected for one reason, namely, that it is land-locked towards both N.E. and S.W., besides having the additional advantage of being airy, and distant from the mangrove swamps, whereas in the bays on the N. coast of Great Nicobar these are of immense extent. One of these mangrove swamps in the central cove was traversed by one of the naturalists, the result of which was that he found a river debouching into the sea through the very heart of the swamp, which, however, so long as the sea-water could find entrance, was not of course drinkable.

On the west side of Great Nicobar, along the whole length of which we sailed, but which we could not visit more carefully, owing to want of time and the heavy S.W. swell of the ocean, several other promontories and coves are apparently available as harbours, and moreover may be supposed to be the embouchures of rivers. At the south point of Great Nicobar there is a large bay, which however being quite exposed from

S.W. to S.E. must be anything but a safe anchorage during the S.W. monsoon. During the prevalence of the N.E. monsoon it seems tolerably well suited for an anchorage, if the eastern promontory be kept S.E. by S., and the anchor be cast in soundings of from 10 to 13 fathoms. Landing, however, is at all times a matter of difficulty, as the surf is very boisterous and the swell of the sea pretty heavy. Its most remote point is the mouth of the river Galatea, which, however, is closed by a sand-bar, and for that reason cannot be easily reached. This bay, owing to its configuration, is excessively hot and sweltering, and with reference to its salubrity cannot be recommended as a suitable abode.

The climate of the Archipelago, though tropical, is not nevertheless to be ranked among the hottest, in consequence of its insular position, and of the whole of the islands being thickly clothed with forest. Hence the quantity of rain, which, as has been seen, is sufficient to keep the rivers full even in the dry season. According to the meteorological observations made on these islands by various observers at different periods of the year, the average temperature does not exceed 77° Fahr., much about the temperature of the fluid found in the fresh unripe cocoa-nut. But during the months of April and October respectively, at which period calms prevail in these islands, the maximum temperature of 86° to 88° Fahr. is reached.

Considering the violence with which rain falls, and that the dry season of the N.E. monsoon from November to March,

and the damp season of the S.W. monsoon from April to October, are by no means so sharply defined on these islands as on the adjoining coasts of the mainland, the quantity of annual rainfall must be enormous. At certain times it is not much less than 100 or even 150 inches, and yet it probably is not so high as that presented by other localities, which experience the regular changes of the monsoons, as for instance, in the Straits of Malacca, where the annual rainfall is 208 inches, or Mahableshwur south of Bombay, where it amounts to no less than 254 inches! March is the dryest month in the year. During the whole of the month, which we spent on the islands or in their immediate vicinity, we only had three sharp thunder-storms. These become more frequent and severe during April, until about May or June the S.W. monsoon sets in and envelopes the islands in rain-clouds. Where some special physical configuration of the soil does not admit of the rapid carrying off of the redundant deluge of rain, the island must necessarily be unusually well off for water. Of the correctness of this theory we were enabled thoroughly to satisfy ourselves, since the close of the dry season is necessarily unfavourable to there being any water remaining in the streams and brooks; notwithstanding which even the smallest of the islands, Pulo Milù and Kondul, although their rivulets had ceased to flow, possessed a sufficient supply of sweet drinkable water among the numerous basin-shaped pools that occur in the beds of the various streams. From the forest-covered slopes of Tillangschong also, small streams of fresh

water are continually trickling. The insignificant brooks and rivers of the large well-wooded islands lying further to the south of Great and Little Nicobar, are in like manner kept full the whole year by the blessed abundance of the watery element. On the other hand, the northern islands, so far at least as the marl formation extends, seem to be but scantily supplied with water, especially on Kamorta, Nangkauri, Tringkut, and apparently Teressa and Bampoka as well. All the small streams on the two first-named islands, which fall into the Nangkauri harbour, were found to be very nearly dried up.

The principal beverage of the natives of these islands is the fluid contents of the unripe cocoa-nut, while it should seem that they fetch the water required for house purposes from the pools of sweet water, which they find scattered here and there among the river-courses. Springs we saw none, with the exception of the old ruined one of the Moravian Brethren near the village of Malacca on the island of Nangkauri. Kar-Nicobar, although likewise belonging to the same marl-formation as the before-mentioned islands, has nevertheless no lack of drinkable water, since the expanse of land raised from eight to twelve feet above the level of the ocean constitutes the site of those singular springs, the sweet water in which rises and falls with the ebb and flow of the tide. The explanation of this singular phenomenon must not be sought for in the filtration of the sea-water by the coral rock, but is simply due to the rain-water, being the lighter, float-

ing upon the surface of the sea-water, which is heavier, while the porous coral rock prevents the complete intermixture of the salt and fresh water. In the villages of Moose and Sáoui on Kar-Nicobar we saw several such cisterns, which always had eight or ten feet good fresh water. Of rivers, properly so called, we found but two, one falling into the northern Bay of Kar-Nicobar, the other at the southern point of Great Nicobar. The former, which from the luxuriant growth of the cabbage tree along its banks we named "Areca-river," is navigable for flat-boats for about two miles from its mouth, at which point further progress is arrested by some small rapids. Here the water is quite sweet, holding but a very little chalk in solution.

We found no mineral waters or warm springs. The hardened marl deposits of Nangkauri harbour we perceived however to be encased in a crust an inch thick of sulphate of magnesia, and fine silk-like glistening fibres; this results from the clay-marl containing sulphate of magnesia, so that very possibly by digging cistern-shaped cavities, a bitter saline solution might be obtained similar to that at present obtained under similar circumstances at Billin in Bohemia.

In consequence of the extraordinarily rich vegetation, the dampness of the soil, and the numerous mangrove swamps all along the coast, the climate, as may readily be conceived, is at present anything but salubrious. During the changes of the monsoons especially, a fever breaks out of so malignant a type that it is very frequently fatal to Europeans.

But, so long as dense forest, creeping plants, and swamps encumber the soil, there can be no country within the tropics favourable to the health of man, and all immigrants or other persons who make a sufficiently long stay in such localities, prepare themselves for being visited by maladies of the most formidable nature, among which fever and dysentery play the most conspicuous part.

Similar conditions are occasionally met with in certain parts of Europe where swamp and uncultivated land are exposed to the influences of a high temperature, of which examples enough are furnished in the malaria of Italy, and the marsh fever of the lagoons of Venice and along the coasts of Istria. And if such visitations make less impression upon us in Europe, it is not that there is little danger, but simply because, as habit is second nature, the regularity of their return has ceased to attract attention.

This is precisely what the English have experienced in the East Indies, it is what the German emigrant is now going through on the banks of the Mississippi and Ohio, in Brazil and in Peru, until the forests are cleared and rendered productive, until, in short, advancing cultivation has dispelled those miasmata, which are inevitably developed amid the undisturbed voluptuousness of nature.

When at certain seasons of the year the vital principles of millions upon millions of organisms begin to be active, they throw off oxygen into the atmosphere, replacing it by absorbing carbonic acid; while, on the other hand, different

organisms, in conformity with known chemical laws, are destroyed under similar conditions, and, under the influence of the atmosphere co-operating with humidity, ferment and become decomposed. From all which processes result products of emanation, which, caught up into the atmosphere and whirled away by the wind, become in their turn the means of nutriment and fertilization to other plants, thus imparting to tropical vegetation that marvellous rankness and superabundance so fatal to the human frame. But the conditions which produce this tendency in the atmosphere to generate fever are not peculiar to certain localities, or strictly confined to these; they can be averted, and with them the vapours so prejudicial to health may be removed. We have but to raise up a barrier against that mighty all-devouring process of life and vegetation, which imperils our own conditions of existence, we have but to withdraw from the powerful agencies of chemical action the substances undergoing decomposition, to constrain the waters of heaven to follow certain definite directions, to drain every swamp, to clear the forest, to sweep away the dense underwood in order that the wind may wander unchecked over the now fertilized soil, and a wondrous alteration will take place in the climatic conditions of the Nicobar Islands. Of what may be achieved under such circumstances by energy and perseverance, the island of Penang, some 350 nautical miles distant, furnishes the most striking example, which within a very few decades has, by dint of the progressive clearing and cultivation of the

soil, been converted from a den of fever and malaria, a spot shunned by all men as a residence, into one of the most healthy localities in the East, so much so indeed that it has been made a resort for invalids!

Seduced by the attractive beauty of the harbour of Nangkauri, the various attempts at founding a settlement have almost without exception been confined to that site. Upon a more close examination however of the precise spot selected for these settlements, it becomes at once apparent that they were for the most part pitched upon the neck of land which divides the land-locked ill-ventilated harbour of Nangkauri from the Bay of Ulàla, surrounded as it is on all sides by thick mangrove swamps.

On such a site did the settlers erect their huts, and there, often at but a short interval after their arrival, did they find their grave; and if a very few of their number resisted the deadly influence of the miasmatic vapours, if even they were able for several years to drag along a miserable existence in such a scene, these can only be regarded as striking examples of an unusual vigour of constitution. It is true that most of these missionaries who founded settlements here were by no means properly housed and fed, which in such a climate is a matter of absolute prime necessity for the preservation of health. Often when already attacked with fever they toiled, spade in hand, delving the ground amid the exhausting heat of a tropical day in order to secure the means of subsistence, or gathered shell-fish along the beach, or hunted for reptiles or

birds through the swamps and forest, in order to provide themselves, by the sale of these natural curiosities in Europe, with the means of existence in those distant regions. Not without feelings of the keenest emotion and deepest sympathy is it possible to peruse the description given by one of these missionaries, Father Hänsel, of his mode of life on the island of Nangkauri, where he lived for seven years amidst the greatest privations and hardships. "On my frequent excursions along the sea-coast," says the noble, high-souled missionary, "it sometimes happened that I was benighted, and I could not with convenience return to our dwelling; but I was never at a loss for a bed. The greater part of the beach consists of a remarkably fine white sand, which above high-water mark is perfectly clean and dry. Into this I dug with ease a hole large enough to contain my body, forming a mound as a pillow for my head; I then lay down, and by collecting the sand over me buried myself in it up to the neck. My faithful dog always laid across my body, ready to give the alarm in case of disturbance from any quarter. However, I was under no apprehensions from wild animals; crocodiles and caimans never haunt the open coast, but keep in creeks and lagoons; and there are no other ravenous beasts on the island. The only annoyance I suffered, was from the nocturnal perambulations of an immense variety of crabs of all sizes, the crackling noise of whose armour would sometimes keep me awake. But they were well watched by my dog, and if any one ventured to approach too near, he was sure

to be suddenly seized and thrown to a more respectful distance. Or if a crab of a more tremendous appearance would deter my dog from exposing his nose to its claws, he would bark and frighten it away, by which however I was sometimes more seriously alarmed than the occasion required. Many a comfortable night's rest have I had in these sepulchral dormitories when the nights were clear and dry, and the heavens spangled with stars."*

After such a description, one cannot but feel astonished that any of these men, jealous for the faith, should have been able to linger on for years in such a plight, and assuredly no one will refuse to these heroes of Christianity their meed of the deepest admiration and gratitude, which they merit none the less that their labours among these natives were almost entirely unattended by any permanent good results.

It seems specially worthy of remark that the crew of the Austrian ship *Joseph and Theresa*, which spent as much as five months here, and that too during the rainy season (April to September), almost entirely escaped fever. This fact sufficiently proves that the rainy season is by no means the most unhealthy, but that the periods of transition from the dry to the wet season, and *vice versâ*, must be considered as

* "Letters on the Nicobar Islands, etc. Addressed by the Rev. I. Gottfried Hänsel, the only surviving missionary, to the Rev. C. J. Latrobe. London, 1812." We are indebted for these rare pamphlets to the kindness of Dr. Rosen of the community of the Moravian Brethren at Genaadendal in South Africa, and do not think, despite its deep interest in the history of missions, that it has ever been translated into another language. Brown in his "History of Missions" has made a few brief extracts from it.

invariably prejudicial. At these times light variable winds alternate with thunder-showers, after which there is usually experienced great heat by solar radiation, which at once liberates the noxious emanations of the humid soil. Further on; during the actual rainy season, when the heavens are almost continually veiled, and the condition of the atmosphere and the soil is alike one of complete saturation, this phenomenon appears much less marked, and becomes in a corresponding degree less dangerous to human organization.

We are also of opinion that the time from the end of March to the end of April, as also the months of September and October, are the most insalubrious parts of the year, although on the Nicobars a man may be struck down with fever at any season, so soon as those precautions have been neglected, which are so necessary to observe in the uncultivated regions of the tropics. An instance on this point is furnished in the case of the crew of the Danish corvette *Galatea*. Of thirty individuals engaged in an exploring expedition up what is known as the Galatea river, in the southern Bay of Great Nicobar, and caught one night in a thunder-storm, which compelled them to remain in the forest wringing wet, no fewer than twenty-one fell ill of fever, which ultimately proved fatal in four cases.

So far as our own experience goes, the state of health on board the frigate during a stay of thirty-two days was highly satisfactory. During that entire period, out of 350 men only six took ill with fever, which number, however, at a later

period during our passage to the straits of Malacca, was increased to 21. Singular to say, those of the ship's company, who during our stay had *never set foot* on the Nicobar Islands, furnished the largest contingent of cases of fever, while of both officers and naturalists, who spent the whole day together among the swamps and the forest, and were exposed to all manner of fatigue, only three got upon the sick list. On the whole, however, even the few severer cases made an excellent recovery, and by the time we had anchored in the harbour of Singapore, all the fever patients were once more either quite well, or in a fair way towards convalescence.

As the examination of this Archipelago was, in consequence of the all but impenetrable forests, confined to the narrow strip of land along the shore, we had almost said to the region of cocoa-palms exclusively, its various geognostic features were very inadequately, yet withal approximately, ascertained. If we admit that a covering of vegetation of the utmost variety and primeval luxuriance, untouched by the hand of man, and entirely unreclaimed by cultivation, may be considered as the expressive feature by which an estimate could be arrived at of the different geognostic conditions of soil beneath, we may succeed in our attempt from the characteristics of this primeval vegetation, to come to some definite conclusion as to the quality and the greater or lesser productiveness of the ground. According to this method of computing, it would seem that,

I. The forest, in the ordinary acceptation of the term, in-

cludes $\frac{70}{100}$ of the entire surface of the island:—the soil being limestone, rich in alkalies, spungy, with clay-sand, and exceedingly fertile.

II. On the other hand, the grass vegetation proper may be set down at $\frac{15}{100}$ of the surface: a barren, clay soil.

III. The cocoa forest may be estimated at $\frac{5}{100}$ of the entire area; upon a fruitful soil of coral conglomerate, coral sand, and dried alluvium.

IV. In like manner the screw-pine forests cover $\frac{5}{100}$ of the entire insular surface, the soil marshy but well suited for cultivation, with fresh-water bogs, and moist fresh-water alluvium.

V. Lastly, the mangrove forest in like manner may be roughly estimated at $\frac{5}{100}$ of the superficial area, and is a swampy soil, unfitted for cultivation, consisting of salt-water marshes, and alluvium, moistened by salt-water.

The entire superficial area of the islands may be computed at about 627 square miles. Reckoning only $\frac{7}{10}$ therefore of the surface as consisting of soil suitable for culture, which may undoubtedly be assumed as a fair approximation, we have a surface of 439 square miles capable of being made productive. But even the very ground now exclusively covered with grass, might be made productive with a more numerous population and a corresponding improvement in cultivation, so that these islands, now the abode of about 5000 savages, could easily support in comfort a population of over 100,000 industrious men.

At present the chief product of the islands is the cocoa-nut palm, which grows for the most part on the sea-shore, so far as the coral-sand reaches. Within the same limits is the existence of the inhabitants confined, destitute as they are of industry or the capacity to cultivate the soil. This invaluable plant seldom extends far into the interior, and from this circumstance was named by a celebrated German traveller and botanist, Martius, the "Sea-shore palm." It is, however, as yet undecided whether the cocoa-palm is indigenous to the Nicobar Islands, or whether, cast on these shores by the waves, it has, by virtue of its well-known property of putting forth shoots even in salt-water, gradually propagated itself without any assistance from man.

It is said that the profit realized by those engaged in the trade in these nuts, amounts to from 20 to 40 per cent., and could greatly be increased, if, as for example in Ceylon, oil-presses were erected, by means of which the expense of transporting the heavy bulky loads of nuts would be economised, the oil being exported direct. On the more northerly islands the cocoa forest embraces proportionately a far larger area, those more to the south being much less abundantly supplied, especially Greater Nicobar, where there is hardly any. Accordingly the more northerly islands are much the more densely peopled, and the cocoa-palms are there subdivided as property, while on the southern islands they seem to be freely enjoyed in common.

Next in importance to the cocoa-nut palm, as a means of

subsistence to the inhabitants, is the *Pandanus Melori*, of the family of the Pandaneæ, the fruit of which (Melori or Caldevia of the Portuguese, the Laróhm of the natives) supplies the place of rice and Indian corn, neither of which are grown on the island, owing to the ignorance of the islanders of the principles of cultivation, although the nature of the soil seems eminently suited to the production of both. From the huge fruit of this Pandanus, a species of bread is prepared, very similar to apple marmalade, which is eaten by the natives along with the soft white kernel of the ripe cocoa-nut. The leaves are prepared as mats of every sort and description, and are occasionally used for the manufacture of sails.

The Bread-fruit tree (*Podocarpus incisa*), which furnishes such excellent nutriment, that, according to Cook,* three trees suffice to support a man during eight months, is found on the islands in single individuals, and we never happened to see its fruit used by the natives. The plantain too seemed but sparingly planted, although the elegant leafy green canopy of this the most important and nutritious plant, after the cocoa-nut, requires but little care in cultivation. The sugar-cane, the muscat-nut tree (*Myristia Moschatea*), and the *Cardamum Elettaria*,† grow and flourish on most of the

* "If an inhabitant of the South Sea Islands have planted during his life but ten bread-fruit trees," says Cook, "he has fulfilled his duties towards his own and his grand-children as fully and effectually as the denizen of our rougher clime, who during his life-long endures the severity of winter, and exhausts his energies in the heats of summer, in order to provide his household with bread, and to save up some trifle for his family to inherit."

† From the Malabar word Elettári. This is the common seed so well known in

islands, and orange and lemon trees of the most stupendous proportions may be met with, growing wild in the immediate vicinity of the native dwellings.

Of tubers we only found the yam growing in considerable quantities, but it seems to be cultivated by the natives more as an article of exchange with the ships visiting the islands, than for their own use. So far however as we could ascertain the capabilities of the soil, the Jucca (*Jakopha Manihot*), the sweet potato (the *Camote* of the Spanish colonies), and other American tuberous roots, might flourish here at least as well as on the hot damp coasts of the western continent.

The number of plants collected by our botanists throughout this group of islands, amounts to 280 different species; however by a more thorough exploration of the Archipelago, the *Phanerogamous* species may be increased one half in number.

There are also two plants, which, although they cannot be included among the vegetable products suited for the sustenance of man, must nevertheless be taken into account as contributing in an important degree to the subsistence of the natives. These are the Areca palm, and the Betel shrub.

The nut of the *Areca Catechu*, and the green leaf of the *Piper Betle*, constitute as already mentioned, together with coral lime, the chief ingredients of *Betel*, that singular salivatory compound, which has become a prime luxury for the

the pharmacopeia in the form of a carminative tincture, and is usually known as Alpinia Cardamomia.

inhabitants of the Indies, and the adjacent islands. The Areca palm, with its graceful straight stem and elegant tuft of leaves, is indigenous to the entire group, and is found in considerable quantities. With the enormous demand for it as a salivatory, as also as an article of medicine, it might, had the natives the slightest turn for cultivation, yield a large profit as an article of commerce. The Betel shrub is also found in large quantities in these islands, and needs but little looking after.

The wealth of the forest in ornamental timber, and wood fit for building purposes, is so great that, if carefully surveyed and judiciously thinned, they would not only furnish the settler with cleared soil suitable for cultivation, but would likewise permit an immense profit to be realized.*

The Nicobar Islands had been recommended by a learned member of the Society of Physicians of Vienna, as a special subject of inquiry as to whether this group were not by position, conditions of soil, and climate, particularly suitable for the cultivation of the Peruvian bark tree, whose importance for medical purposes is daily increasing. So far as

* With respect to the resemblance if not indeed identity of the vegetation of the Nicobar Archipelago, with that of the surrounding islands, and the mainland, we beg to refer here to the excellent work of an Austrian naturalist, the learned Dr. Helfer, who, stricken in the flower of his days by the poisoned arrow of a native of the Andaman Islands, fell a victim to his zeal for travel. To the Imperial Royal Geographical Society of Vienna, science is indebted for the German edition of this important information, under the title of the Published and Unpublished Works of Dr. J. W. Helfer upon the Tenasserm Provinces, the Mergins Archipelago, and the Andaman Islands, in the third volume of its Proceedings for 1859.

our brief stay admitted, we did not lose sight of this object, but the practical observations we made in the course of our voyage led us to conclusions widely different from those which, representing the quinquina tree as in danger of being extirpated on its native soil, South America, by the carelessness of the Indians, regarded its transplantation into other countries as a question of the utmost importance for the interests of the human race. The China tree, very far from becoming extinct, is carefully cultivated in Peru, Bolivia, and Ecuador. The bark is systematically cropped in most of these localities, and consequently there is no occasion to anticipate any considerable increase in price, or failure in the supply of this precious drug. We shall have an opportunity, when describing our stay at Java and at the west coast of America, to revert at length to this question, and shall have only to add the remark, that the great expense of such an attempt, and the extraordinary watchfulness and care which must be bestowed on the China tree for a number of years before the slightest profit can be derived from it, seem alone to render hopeless such an undertaking as its introduction in the Nicobar Islands, even were the climatic conditions better suited to such an experiment than we have reason to believe that they are.

As for the zoology of these islands, it seems to be much less developed, whether as regards numbers, or size, than might be expected, considering the luxuriance of the vegetation. The forests are by their very nature poor in living denizens,

the majority of these consisting of various species of birds. In like manner the sea is but little productive, and the nets which we cast over the ship's side at Kar-Nicobar, Pulo Milù, and Ganges-harbour, like the hook and line, brought up but few specimens, and those hardly deserving of notice. The natives have no nets of any sort, their mode of fishing consisting simply of raising a succession of weirs, in which they can harpoon or take their prey.

Of domestic animals we saw only swine, hens, dogs, and cats, all of which live upon cocoa-nut. The dog, a smooth-haired cur of a light brownish-yellow colour, with pointed ears, is a sad coward, and his bark rather resembles a prolonged howl. The cats and the hens are exactly like those of Europe. Cattle for draught or the dairy, are as yet entirely unknown to the natives; yet they might easily be introduced from the adjoining shores of India. The zebra breed especially, already acclimatized in the tropics, would be of conspicuous utility as beasts of draught, supposing any attempt made at cultivation of the soil.

Judging by the experiments made at Pulo Milù, the introduction of goats and sheep could only be accomplished with much difficulty. On the other hand all manner of poultry would be found to thrive in these islands.

In passing from this very cursory consideration of the natural history of these islands* to the race of man who in-

* An extensive description of the zoology of these islands is reserved for the zoological part of the Novara publications, published at the expense of the Austrian government, at the Imperial Printing-office in Vienna.

habit them, we find ourselves confronted with a people, who, on account of the primitive manner in which they live, attract our interest in the highest degree. The natives of the Nicobar group, whose entire number may be estimated at from 5000 to 6000 souls, are, as we have already remarked, large and well-formed, the skin of a dark brown, bronze-like hue, and owing to the prevailing custom of anointing their bodies with cocoa-nut oil, usually presenting a glancing appearance, and emitting a peculiar odour. This inunction is apparently intended to obviate superabundant perspiration, as also any skin diseases, just as the Indian races west of the Mississippi are accustomed to protect their naked bodies against the direct influences of the cold, by rubbing in the fat of animals. The practice of daubing the face does not seem to be so extensively resorted to, as previous descriptions of the Nicobar islanders had led us to believe. We saw only one solitary native, at the village of Malacca in the island of Nangkauri, who had painted his forehead and cheeks with the red pigment obtained from the seeds of the *Bixa Orellana* (the well-known Annatto dye). Instances of tattooing we never fell in with, nor do these islanders seem to have any desire to imitate the beautiful, sometimes absolutely artistic, designs punctured on the hands and feet of the Malays and Burmese who occasionally visit them. Moles and blotches on the breast and arms are of frequent occurrence. The forehead of the Nicobar islander is slightly rounded, and in many cases may even be said to be well-formed, but it falls

away somewhat suddenly; the face is usually broad, and if we except the rather prominent zygomatic process, approaches the oval type; the hinder portion of the head is flat and seems as though crushed inwards, a circumstance of which Fontana, in his well-known journal already mentioned, takes special notice, and which deserves the more attention, that we think we are in a position, by means of actual measurement, and inquiries made on the spot, to say with certainty that this modification of the normal form of the skull is not natural to this race, but is artificially produced. We especially rely upon the circumstance, that among the natives of Nangkauri and others of the islands, the custom prevails of pressing quite flat the head of the newly-born infant, probably in conformity with Nicobar laws of taste and beauty: in order to make the result more certain, they keep continually repeating this experiment by a variety of different means during a considerable time. The nose is of ordinary dimensions, but is always of unusual breadth, and coarse of outline; we found a few individuals with noses of exorbitant length. Owing to the incredible extent to which the disgusting practice of chewing the betel-nut is carried, their mouth, naturally large, is hideously distorted. On the island of Treis we saw an aged native, whose tongue, in consequence of the incessant betel-chewing, had been attacked in a similar manner as his teeth. The chin is for the most part without any marked characteristic, and is usually rather retreating. The maxillary bones are broad and projecting, and the

zygoma has a rather bold curve. The ears are small, but the flaps on the other hand are so broad, that when pierced they are ornamented with a piece of bamboo an inch thick.

Some of the natives make use of this broad aperture to store away cigars. The thin eye-brows do not curve over the whole of the superior arch of the eye. The hair for the most part is beautiful, thick, black, and soft, in many instances depending low on both sides. The beard is universally very thin, and instances of mustachios or goatees are very rarely encountered. However a beard does not seem to be classed among those objects which add to the Nicobar ideal of beauty. At least, as often as they found an opportunity of seizing a pair of scissors from our dressing-cases, we used always to see the natives eagerly setting about extirpating the few hairs, which despite all their endeavours would persist in appearing upon the upper lip on either side of the mouth. The expression of their face is grave, tranquil, and rather *insouciant*. We never saw in their features any expression of emotion, such for instance as might have been imparted by delight at having obtained some coveted object, not even when they had manifested the utmost eagerness to possess it. The only excitement which their ordinarily impassive countenances were however many a time called on to indicate, took the form of an expression of pain and anxiety, as often as they saw a number of strangers make a descent upon their islands. The singularly marked similarity of feature in each and every individual, may safely be ascribed to the similarity of

condition universally prevalent, to the small scope given to the play of their affections, and to the frequent intermarriage, which must necessarily be the case where, as in these islands, a couple of hundred human beings form the whole population of an island, and where intercommunication with the adjoining islands is so confined.

The assertion by Fontana, that the natives never cut their nails, but on the other hand shave off their eye-brows, we have never found confirmed in any of the islands we visited, although very possibly some few individuals, certainly so far as we could find very scanty in number, may ape the customs of their Malay and Chinese visitors, by letting their nails grow. Of cripples, or at all events of individuals stunted in their growth, we saw but two, the first case being that of a native of Kar-Nicobar, who in consequence of a dislocation of the *radius* at the wrist joint was entirely powerless of the left arm; while the second, a sort of dwarf, who was likewise an inhabitant of that island, presented a well-marked corpulence in the extremities, and fingers so swelled up and short, that he was known among his neighbours by the nickname of *Kiutakunti* (short finger).

Hitherto the natives seem to have escaped the ravages of syphilitic diseases. As to any instances of visitations of virulent though temporary epidemics, we could not get any information of such having occurred; they have however in their language a word (Mallók) for the small-pox, of the existence of which we had convinced ourselves by

personal demonstration in the case of a Malay, whose face was frightfully disfigured by the marks of this appalling disease.

Although in a climate the annual average of which is 81° Fahr., clothes are all but unnecessary, the natives nevertheless manifest an extraordinary passion for European clothing, and when it seemed impracticable by any other means to elicit an expression of pleasure on their calm, indifferent, emotionless countenances, it was always possible to succeed by presenting them with a shirt, a coat, or a black silk round hat. As however the natives have seldom been presented with more than one such article at a time, and many a year is apt to elapse ere he gets another, by which he might succeed in gradually completing his dress, the Nicobarian makes his appearance before strangers attired in the most extraordinary fashion, almost entirely naked, sometimes with only a black hat on his head, or pluming himself on being spruced up in a frock coat (but without shirt, stockings, or head gear), which on the plump naked brown skin of this child of nature has far more the appearance of a straight-waistcoat than a comfortable article of dress.

The natives show infinitely more vanity in the selection of a piece of clothing, than calculation as to its real necessity or suitability. A large low-crowned white hat with broad rim, which we presented to one native, gained not the slightest approval, although both in form and colour it was far better suited to protecting the wearer against the rays of the tropical

sun than a high, narrow-brimmed, fashionable black silk hat, to the possession of which the natives of Kar-Nicobar and Nangkauri attach quite an inordinate value. For such an article, in the course of barter, they offer 1600 ripe cocoa-nuts, while for a long piece of wide dark-coloured muslin, in which they are wont to envelope their dead, they will give only 1200 such fruits. But the most characteristic head-gear of the Nicobarians is a bandeau made of dried leaves of the cocoa-nut palm, which gives them quite a picturesque appearance. We saw but few ornaments worn, such as necklaces, bracelets, &c., only one or two of the younger men having their hands and their necks adorned with massive rings of silver and iron wire.

The dwellings of the natives are usually round, beehive-shaped huts, resting on a number of stakes of from six to eight feet in height. Simple as is the construction of these huts, it nevertheless, especially on the island of Kar-Nicobar, possesses a certain degree of ornament, we might almost say elegance, while the thatching of dried palm leaves, as also the beams and the walls constructed of reeds (*Calamus Rotang*), are a branch of industry which would do honour even to civilized races of the world. The natives usually cower or squat on the ground, or seat themselves upon some cocoa-nut that has chanced to fall, while at night, stretched out upon the flowers shed by the Areca palm, and with their heads elevated by a piece of hard wood, they find anywhere a sufficiently comfortable couch.

The means of subsistence of the Nicobar islanders are anything but abundant. As they are utterly ignorant of cultivation, they are entirely indebted for the very first necessaries of life to the provision which a bountiful nature has supplied to them, without the assistance of man's labour. Their chief articles of food are the cocoa-nut and the pandanus fruit. As with the natives of India, so among the natives of the Nicobar group, the cocoa-palm is applied to the most various purposes, although it would be difficult to make it fulfil all the ninety and nine useful purposes which the Hindoo proverb assigns to this noble individual of the royal race of palms. The cocoa-palm likewise constitutes the chief article of export of the entire group, while the profit from the Trepang (Biche de Mar of the English, a sort of cockle), edible swallows' nests, tortoise-shell, amber, and so forth, is of the highest importance in the interchange of commerce.

The betel shrub (*Piper Betle*), next to the cocoa-nut and pandanus fruit, one of the most important necessities of the inhabitants of these islands, is not indigenous, but has been introduced hither from the peninsula of Malacca, and formed for a long time an article of commerce and exchange. At present this creeper, which spreads with hardly any particular care, is found in such quantities that only a small proportion of the leafy produce can be consumed by the sparse population. It was always incomprehensible to us in what could consist the great charm of betel-chewing, that a habit so loathsome should be so extensively practised by the very

lowest slaves of the princes of India, by poor as well as rich, nay, should fling its chains, as it actually does, even over women and children. A lucky chance, however, threw in our way a Sanscrit poem (*Hytopedesa*) which celebrates as follows the thirteen cardinal virtues of the betel-leaf:—"Betel is pungent, bitter, aromatic, sweet, alkaline, astringent, a carminative, a dispeller of phlegm, a vermifuge, a sweetener of the breath, an ornament of the mouth, a remover of impurities, and a kindler of the flame of love! O friend! these thirteen properties of betel are hard to be met with, even in heaven!"*

It would be an inquiry of considerable interest to trace the influence which the incessant betel-chewing exercises over the longevity of the inhabitants, and the changes caused in the masticatory organs, which are so constantly exposed to these pernicious practices.

That which most deeply struck us throughout the Nicobars, was the frightful decomposition of the teeth, whereas in other betel-chewing races these were stained only of the same deep crimson as the lips and the gums. We at first ascribed this difference to some variation in the mixture of the ingredients, but we repeatedly perceived afterwards that the betel used on the Nicobar group consisted of nothing else than a small piece of Areca-nut, which, sprinkled with a little chalk, was enveloped in a green aromatic betel-leaf, and so was popped

* The Tagali maidens of Luzon regard it as a special proof of the honourable intentions and eagerness of passion of their admirers, if these latter take the betel quid from their mouths!

into the mouth. The Hindoos, on the other hand, add to these ingredients, which they always carry about with them in elegant cases, a certain astringent substance (formerly called *Terra Japonica*, because it was long supposed to be a mineral product) made out of the pith of the *Acacia Catechu*, a species of Mimosa; or occasionally add to the usual masticatory composition a species of resin obtained from the *Melaleuca Cajeputi*, as also a little tobacco.

The frightfully destructive effects of the betel on the teeth and lips of the Nicobar natives, is apparently attributable only to some difference in the proportions of the ingredients used, very probably to the use of a larger quantity of coral-lime. What is alleged of a custom the Nicobarians have of filing down their teeth and rubbing them with some corrosive substance, rests exclusively upon conjecture, and is confirmed neither by personal observation nor by the account given by the natives themselves, nor by the Malay traders who frequent Great Nicobar and Nangkauri.

In social as well as in religious matters, we must consider the inhabitants of this Archipelago as among the child-races of the world. They consider it a duty to marry very young and take but one wife, but they age with uncommon rapidity. Of about 100 natives with whom during our stay on the various islands we were in communication, hardly one was above forty, and the majority may be roughly estimated at from twenty to thirty. If, moreover, we set it down as improbable that all the aged men should have taken to flight

like the women and children, it should seem that these natives never attain a very extended duration of life.

Of the therapeutic powers of various plants that are found in their forests, the natives have but little knowledge. All that they have ever had of drugs have been almost entirely supplied from Europe by captains of English vessels. Although they attach the most extravagant importance to the possession of these, these medicines are, if anything, more prejudicial than beneficial to them, as they of course understand nothing of their use, and often apply them in the most absurd manner. It seems that once some ship captain in order to get quit of their importunities made over to them all the articles he could most conveniently spare, such as castor-oil, Epsom-salts, spirit of camphor, turpentine, peppermint, eau de Cologne, &c. &c., and ever since they pester each visitor for medicine! A native once urgently begged us to give him a little spirit of turpentine; on our asking him to what purpose he wished to apply it, he answered that he wanted to rub himself with it, and take a few drops internally, because he believed it was an excellent preservative against ague and pain in the chest!

The maladies with which the natives are most commonly afflicted, are intermittent fever, phthisis, and rheumatism. In some cases we remarked *Elephantiasis Arabica* (the *Juzam* of Arab writers), called by the Nicobarians *Kelloidy*, attacking the bones, and several different forms of cuticular eruption. The severity of these diseases must be ascribed less to the

insalubrity of the climate than to the unwholesome mode of existence of the natives. Can we feel surprised that naked men, who do not inhabit the more favourably situated spots ventilated by regular winds, but live on the swampy coast, in the sandy bays that are fringed with a forest belt, where they can grow their cocoa-palms with the least labour to themselves, who leave their bodies exposed now to the violence of tropical rains, now to the fiery rays of a tropical sun, and whose food consists almost exclusively of cocoa-nuts and the fruit of the *pandanus*,—can we wonder that they should be in an especial degree subject to disease? It is a mistake to suppose that the food of inhabitants of the tropics is that assigned by Nature herself, and therefore the most beneficial and suitable. For, despite all theory, which for residents in the tropics chiefly prescribes substances with plenty of carbon and nitrogen as the proper articles of food, we see Europeans, more especially Englishmen, in the hottest climate in the world, with a thermometer that rarely falls below 86° Fahr., devouring, just as in a more northern climate, strong soups, gigantic beef-steaks, and mutton cutlets to any extent, contemptuously turning up their noses at mere vegetable diet, and barely touching marmalade or sweetmeats; yet there they are blooming in the best of health, far better even than that of the natives. Indeed, it is a fact full of interest, and confirmed by observations carried on for years, that in the Presidency of Madras, for example, the Hindoos and Mahmudas, so widely different in their customs and mode

of life, were much more seriously attacked by fever than the Europeans resident there, in such entirely different conditions of climate than they were accustomed to. On the other hand, so far as regards sanitary measures, that portion of the aboriginal population presents the most favourable results which is most intimately allied to the Europeans, and applies in its own case the precepts of modern civilization.

So soon as the natives are attacked by fever with any severity, they rapidly succumb. However, we have never heard tell of any of that barbarous inhumanity which any medicine-man, whose treatment is unsuccessful, is said to experience at the hands of the relatives and friends of the patient, which indeed is all the more improbable as, were such really the case, considering the small advantages and scrimp fees likely to be picked up by a smart medicine-man among such an impoverished race, there would hardly be met with one Manluéna in the entire group! The head-mark of a doctor in the southern islands is his unusually long floating hair. On our inquiring of a native what qualifications were requisite in order to become a doctor, he replied with the most charming naïveté: "One must be the son of a doctor!" From this reply we may gather that in the Nicobar Islands medical skill and knowledge of the healing art are confined to certain families! We afterwards found this information confirmed, upon our discovering that the youthful Manluéna of Great Nicobar, who so severely kneaded and twisted the arm of one of the associates of the Expedi-

tion, was the son of an aged doctor of the island of Kondul, and owed his reputation solely to the circumstance of his kindred. Besides cases of sickness, the advice, the adroitness, and the zeal of the Manluéna are held in special repute for the driving out of the evil spirit or *Eewees*, by which, as already mentioned, the inhabitants of the Nicobar Islands believe themselves to be incessantly surrounded.

Of idols proper, such as barbarous tribes construct and honour, and to whom they dedicate temples, they have none; nor have they any object in nature, as, for instance, a lofty tree, a huge rock or a hill, to which they attach a certain charm, like some of the Central American tribes. They have not even a word for the Divine idea in their language, nor for Godhead, nor for any Beneficent Principle or Being, and the rudely carved figures, which are found set up in all sorts of comical postures within their huts, are intended to serve no higher purpose, than to frighten away those evil spirits which even the Manluéna has been unable to see, though he sets himself forward as able to hold converse with them.

The notion of a Being, whose wisdom and whose love rule the world, is quite as foreign to their minds as the conception of a spiritual life in the future after death. We repeatedly asked one of their most intelligent leaders, who also spoke a little English, whether he believed he should ever again recognize his dead friends and relatives? But he replied invariably with a cold, indifferent, "Never, never!" All that we told them of the privileges of a believing Christian,

of a Divine Being, of the belief in a future state of existence after death, served only to fill them with astonishment, but they seemed ready enough to listen to such subjects. What little they had heard upon these truths from missionaries and ship captains, appeared however to have left them with very confused notions.

From all that came under our notice, the mode of life of these islanders is singularly uniform and indolent, its most important events consisting probably of the alterations necessary by the interchange of the seasons. They know of no other method of computing time than the change of the moon and of the monsoons. At the beginning of the wet season or S. W. monsoon, and at the corresponding period of the dry season or N. E. monsoon, there are certain festivals, which somewhat resemble the "sowing feasts" and "harvest homes" of the American aboriginal stocks. They have however no appointed day of rest, corresponding to the sabbath of the Christian Church, nor indeed do they need such, seeing that in their mode of life every day is a holiday! They have no measure for time, nor indeed for anything else: not a single native could give us any idea of his own age, nor could count above 20.* Time has for them not the slightest value: the watchword "*Time is money!*" which first given by England, is at present resounding throughout the world, falls voiceless and ineffectual on their insensible ears. Their

* We did fall in with some few individuals on these islands who by dint of much exertion could count as high as 100.

reckoning of time is as limited as their capacity for recollecting by-gone occurrences. The presence of Christian missionaries at various periods, as also the visit of the Danish corvette *Galatea* in 1847, had already almost entirely disappeared from their memory. Only among a very few of their numbers have some of the names clung to the recollection, such as *Galatea*, and *Steene Bille* (which they pronounced *Piller*).

We could not find anything that bore the least resemblance to any settled form of government, to any distribution upon fixed principles of the possessions of the general community, to any recognition of individual right, to any tribunal for settling quarrels, &c. &c. They recognize the relations of family and of property; on the other hand, the power of the captain, one of whom the greater number of villages has each for itself, and whom they call *Mah* or *Umiáha* (old), extends no further than giving him the right to be the first to trade with such foreign ships as make their appearance, and to inaugurate the barter-system. Indeed this very institution of captainship, although much liked by the natives, does not at all seem as though it were part of their own system, but to date from the period when English merchant vessels began to visit these islands regularly.

As to the social life of the natives, their family relations, and so forth, we could get such scanty and uncertain data to go upon, what with the cursory visits we paid to the various islands, and considering the women and children had everywhere fled, while the men regarded us simply as intruders,

that we do not venture to publish any special information upon this point. Be it however permitted to express our opinion, that, judging by the tendency to a decent style of dress and the extreme elegance of the decorations of the canoes and the huts of the islanders of Kar-Nicobar, as contrasted with the destitution, nakedness, and wretched condition of the natives of the southern islands of the group, civilization seems to be advancing from north to south with slow but sure steps. And it will probably interest the philologist to be informed that both in Kar-Nicobar and Nangkauri, the most important settlement bears the same name, Malacca, as the chief city on the adjoining Malay peninsula. As the natives in this delicious *far niente* existence live exclusively upon the precious gifts of an all-bountiful Nature, which provides them at once with food and drink, one naturally finds among them few implements of labour, indeed only such as are indispensably necessary in erecting their huts, in preparing their canoes, and in enabling them readily to open the cocoa-nuts. And even these tools, as, for instance, hatchets, cutlasses, files, &c., were first procured through intercourse with civilization.

Their weapons consist merely of lances or javelins with points of iron or hardened wood, by the number of which, it is presumed, the wealth of a Nicobar islander is estimated. A cross-bow, which we saw in the possession of a native of Kar-Nicobar, although made on the island, was manifestly of European design originally, and merely an imitation.

Of musical instruments we did not find a single specimen in Kar-Nicobar, whereas on the southern islands there is a six, sometimes a seven-holed flute in use, made of bamboo-cane, which, as we afterwards discovered, had been brought hither by the Malays; and also a kind of guitar about two or three feet in length, hollowed out, and with sound-holes in the side, and made of thick bamboo and reed strings. On the whole, however, the Nicobarians seem to be much too apathetic and indifferent a race to have any special predilection for music, singing, or dancing. Accordingly at their monsoon festivals and other holiday times, their notion of dancing is limited to hopping round in a circle with arms entwined, while they at the same time keep up a listless humming noise.

In the case of such a race, which has no civilization or industry of its own, it is out of the question to speak of their having any regular industrial occupation in the strict sense of the word. The particular and to them most beneficent plant, which supplies them at once with enough to eat and to drink, at the same time brings them, very reluctantly, into contact with civilization, and will yet become a main agent in introducing a knowledge of those necessities and acquaintance with those articles which are the product of a higher grade of civilization alone. The ripe nuts of the cocoa-palm constitute the chief article of export of the Nicobar Islands, and, what is even more important, supply the stimulus, which already arouses the native to a certain degree of activity, although

most of the nuts that are put on ship-board are collected not by the natives, but by the crews of the Malay vessels. All other articles of export, such as *Biche de mar*, edible birds' nests, tortoise-shell, amber, &c., are of very inferior importance, and are only taken as by-freight. According to published documents the northern islands can supply 10,000,000 cocoa-nuts, of which however, at present, not much more than 5,000,000, to wit, 3,000,000 from Kar-Nicobar alone, and 2,000,000 from the rest of the islands, are exported in all. As this fruit is one-sixth of the price it bears on the coasts of Bengal, the concourse of English and Malay vessels, especially from Pulo Penang, increases every year.* The trade is carried on by way of barter instead of money payments, although silver is highly valued too; for here also, despite all that is reported of the inordinate longing of the Nicobar natives for tobacco, glass-beads, and such like rubbish, the truth of the adage is fully borne out that "Money is the most *universal merchandise*." Of silver coins, the natives are only acquainted with rupees, Spanish dollars, and English three-penny pieces, which latter they call "small rupees." Gold is as yet unknown among the southern islands, and therefore is valueless in the eyes of the natives.

So long as the relations of the natives with foreign nations were exclusively confined to barter with some couple of dozen English and Malay vessels, which latter visited the islands with the N.E. monsoon and left with the S.W. monsoon, thus

* At Pulo Penang the *picul* of ripe cocoa-nuts, 300, is worth $5\frac{1}{2}$ dollars.

making but one voyage in the course of the year, the natives of the various islands kept up among themselves quite a frequent and regular communication. This favourable trait was undoubtedly owing in great measure to the defectiveness of their otherwise very elegant, but small, slight-built canoes, which are but ill adapted for voyaging to any remote distance.

Respecting that other swarthy, crisp-haired, savage race, widely different from that inhabiting the coasts of Nicobar, which, according to a legend, dwells in the forests of Great Nicobar, and lives upon snakes, vermin, roots, and leaves of plants, and in the Nicobar idiom called *Baju-oal-Tschùa*, we could only add to our stock of information by recitals that obviously pertained to the domain of Fable-land. When, however, we remember that not a single traveller or author who has indulged such gossiping, nay, that not even the natives who tell such stories of them, have ever seen one of this race, we shall be excused for suggesting in reply to the numberless conjectures afloat respecting these mysterious inhabitants, that the alleged denizens of the interior of Great Nicobar are neither a widely different race of men from the coast-natives, nor yet an offshoot of the crisp-haired swarthy race of Papuas from New Guinea, but that, dispossessed and degraded by a conjuncture of various hostile influences, they hold, with respect to the inhabitants of the sea-board, a similar position to that occupied by the Bushmen of Namaqualand to the Hottentots of Cape Colony.

In the circumstances in which the inhabitants of this group

of islands at present find themselves, without traditions, without proverbs, without songs, without monuments, and especially without any characteristic peculiarity in their habits and customs which could possibly throw a ray of light upon the obscurity of their origin, it is a bold undertaking to express any decided opinion as to the derivation and genealogy of this people. By far the most probable theory, as is also admitted by Dr. Rink, who visited these islands with the Danish Expedition, would represent them as an offshoot from the north-westerly boundary of the Malay race, as a people which, while possessing much in common with the Indo-Chinese stock, nevertheless in its physical characteristics seems to hold a middle rank between the Malay and the Burmese.

Considering the study *of language* as a most important and reliable source of information, the members of the Expedition made it their main object to draw up, in conformity with what is known as Gallatin's method, so extensively used by all American and English travellers, a vocabulary of about 200 words in both languages, viz. that used by the inhabitants of Nicobar, and that (widely different in all respects except the numerals) in use among the natives of the more southern islands. As a Malay barque from Pulo Penang was lying at anchor during our stay on the northern shores of Great Nicobar, so favourable an opportunity was of course made use of to prepare a similar vocabulary of the Malay idiom spoken at that port, which will give the philologist the advantage of being able to judge for himself as to the similarity existing between

these two idioms, and thence, by analogy, between the two races, and discriminate whether those scholars, such as Vatu, come nearer the truth who maintain that the Nicobar language is of Malay derivation with an admixture of foreign words, principally European, or those other students of philology who, as for instance Adelung, hold that the idiom used by these islanders is identical with some of the languages of the Indo-Chinese peninsula.

At the same time the ethnographer of the Expedition had endeavoured to ascertain by means of a new system of measurements of the human frame, drawn up by himself in concert with Dr. Edward Schwarz, one of the physicians of the Expedition, and with the co-operation and assistance of the latter, various data, such as, when applied to the various races inhabiting the earth, might justify many new and striking conclusions, and ultimately result in definitely fixing the relation, resemblance, or physical dissimilarity of the various races of man. Such a plan makes it much more easy by means of figures, those most undeniable evidences of the results of investigations, to get speedily and accurately at the required results, than by all the most specious theories laid down in the less certain domain of philosophic speculation.

These measurements, applied at three chief regions of the body, namely, the head, the trunk, and the upper and lower extremities, are intended to be scientifically discussed in a special memoir,* and we accordingly confine ourselves here to re-

* "On measurements as a diagnostic means for distinguishing the human races,

marking that the various points of measurements were not only determined in an anthropological point of view, but that among the 68 different categories, into which these measurements are naturally distributed, there occur some which supply many curious points of inquiry, as also considerable assistance not merely to national economics, the result of the light thrown upon the subject of the average of muscular strength of the various races as found by the dynamometer, but also to the graphic art, with respect to a more accurate acquaintance with the human skeleton as well as the entire figure.

In like manner we never omitted to collect some of the hair of the head from as many as possible of the various individuals measured, since the laborious researches of Peter Brown of Philadelphia on the human hair, have elevated it into a very remarkable means of tracing the origin of the various disparities of race.

It must also be considered as an especial boon for the science of comparative anatomy, as well as universal ethnography, that we succeeded in bringing away with us from the Nicobar Islands the skulls of two of the natives.

Lastly, a small collection of twenty-three subjects of ethnographical inquiry, collected from the various islands, will be found useful, partly as illustrating the information already ob-

being a systematic plan established and investigated by Dr. Karl Scherzer and Dr. Edward Schwarz, for the purpose of taking measurements on individuals of different races, during the voyage of H. I. M.'s frigate *Novara* round the world." Vide Proceedings of the I. R. Geographical Society of Vienna, vol. II. of 1859, p. 11.

tained, partly as affording evidence of the amount of culture of the inhabitants of the Nicobar Archipelago.

We are still called upon to answer the question already propounded, whether the Nicobar Islands are suited as the site of a colony, and whether the numerous attempts already made in this direction did not probably fall through for other reasons than those of climate.

According to inquiries instituted by the members of the Austrian Expedition, this insular group, by its geographical position in one of the very chiefest commercial routes of the world, and by the richness and abundance of the products of its soil, offers sufficient points of attraction to interest any leading commercial or maritime power, in securing possession of it. With regard to any colonization or cultivation of the soil by free European immigrants, there is as little to be said as of almost any other islands in the tropics. In order to make such spots aids to the extension of civilization, the utmost certainty of rule is imperatively necessary, such as was instituted with such marvellous results by England in Pulo Penang, Singapore, Sydney, &c. The climate of the Nicobars is very far from being so deadly, that mere residence upon them must speedily prove fatal to Europeans, and it will undoubtedly be signally ameliorated by a partial clearing of the forests, cultivation of the soil, channelling of the rivers, and drainage of the swamps. All such works however must be executed by Malay or Indian labourers, under the superintendence of Europeans. From what we have learned

by personal observation of the surprising influence which the transportation system has exercised in Australia upon the cultivation and development of the soil, as also upon the social condition of the convicts themselves, we do not hesitate, despite the distrust of experiments of such a nature which prevails in certain philosophic circles of Europe, to express our opinion, that with a little prudence and forbearance convict labourers in abundance could be imported, who would be at once better off, more contented, and more disposed to do honour to their man's estate than as at present confined at home in their dreary prison cells.*

If the various experiments hitherto made have all fallen through, the "effect defective" undoubtedly arises from the deficiency of means requisite for such an undertaking, and in the limited number of men, merely humanly speaking, who were engaged in such enterprises. The mere prime cost of clearing and cultivation, so as to enable them to anticipate a good return for their labour, must be set down as at the lowest computation between £100,000 and £150,000; the number of labourers employed in the undertaking at from 300 to 400; of whom all skilled artisans, such as carpenters, joiners, locksmiths, blacksmiths, bricklayers, masons, &c., must accompany the settlers from Europe.

The sums expended for the first outlay must not however be set down as entirely thrown away, since the fertility of

* In the Sydney chapter the reader will find the Transportation question pretty fully discussed.

the islands in those colonial products that are most valuable, and the enormous quantity of cocoa-nut palms, must, under the impulse of cultivation and industrious habits, speedily make returns in countless tides of prosperity. So far as regards the aboriginal population, of whom there are not above 5000 or 6000 on all the islands, they would experience but little annoyance from the carrying out of such an enterprise. In fact, morally and materially they could only gain from the introduction of a foreign element. At present they are confined to the narrow belt of shore, where grows the cocoa-palm, their sole support. The interior of the island, so prolific in natural wealth of the most varied description, and which would become infinitely more valuable under a proper development of its capabilities, is utterly unknown and valueless to the native.

Once a settlement were fairly set a-going on the above-mentioned principles, the inhabitants of the Nicobar Archipelago would be placed under the tutelage of European civilization, and in their transactions would no longer be exposed to the knavery and caprices of ships' captains. It would be necessary to watch over the natives as over minors, so as not alone to secure for them material benefits, but by liberal sympathetic treatment as the groundwork of their education, gradually to establish that faith whose introduction hitherto, despite numerous praiseworthy endeavours in the past as well as the present century, has been doomed to be unsuccessful through a variety of extraneous circumstances. Moreover, the Nicobar Archi-

pelago would be a most convenient central station whence to impart the blessings of Christianity to the pagans of the adjoining groups of islands.

MEMORANDUM

Relating to those points of the Nicobar Archipelago whose geographical position was ascertained by the *Novara* Expedition.

PLACE OF OBSERVATION.	Latitude North.	Longitude East from Greenwich.
Sáui Cove	9° 14′ 8″	92° 44′ 46″
Komios	9 7 32	92 43 42
Morrock Bay	8 32 30	93 34 10
Kauláha	8 2 10	93 29 40
Kondúl	7 12 17	93 39 57
Galatea Cove	6 48 26	93 49 51

A very careful measurement, made at the point of observation in Sáui, of the Moon's distance from Jupiter, gave 6 h. 11 min. 2 sec., or 92° 45′ 30″ East.

Our voyage from the south side of Great Nicobar to Singapore occupied twenty days. This time the fine weather seemed to have entirely abandoned us. Day and night, at almost all hours and from all parts of the sky, we encountered

severe thunder-storms, with water-spouts, lightning, thunder, and the most tremendous rain-squalls. We could thoroughly realize that we were in the tropics at the beginning of the rainy season. One day during the prevalence of one of those floods, five tons during the first half hour, and in the course of an hour and a half eight tons, or 32,000 pints of water, were collected by the sailors in buckets and other similar utensils. These storms came now from the coast of Sumatra, now from the Malay peninsula, or yet again from the Straits of Malacca, and gave our jolly tars not a moment of repose. These tempests alternated with calms accompanied by a most oppressive sweltering hot temperature, and if by chance a breeze sprang up, it was sure to come out of the straits dead against us, and, coupled with the strong contrary current, fairly arrested our progress. Thus tacking about for 14 days between the north shore of Sumatra and Junk-Ceylon, we made as much way in that time as a fast steamer would have done in as many hours, and it was but poor consolation to us that several ships close to us, perhaps six or eight, shared the same adverse destiny.

An incident of a very singular nature suddenly gave us all plenty of excitement. As our deeply respected chaplain was sitting reading one evening in his cabin, he became sensible of a peculiar pressure on his foot; the servant being called, made his appearance with a candle, and on examining the floor was horror-struck at perceiving a pretty large sea-snake (*Chorsydrus fasciatus*), coiled round the foot of

the priest. In the same instant this gentleman instinctively rid himself of the poisonous reptile by a vigorous kick, while the various persons who hurried to the spot were resolved they would secure this dangerous assailant dead or alive. Within the narrow limits of a ship's state-room, a campaign is speedily brought to a close. His snakeship was forthwith routed out of his asylum, and hacked into more pieces than was exactly agreeable to the zoologists, who had been extremely anxious, and even expected, to preserve this now doubly interesting reptile almost uninjured in spirits of wine. It was a tolerably large specimen, one inch thick, and about three feet long, and had apparently either wriggled up the cable, or had been washed on board by a wave through the open sky-light of the cabin.

At length on the 9th of April wind and weather changed, and, in company with the entire squadron of companions in misfortune, we sailed gaily into the Straits of Malacca, with all sail set, and dead before the wind. On the 11th of April, early in the morning, we found Pulo-Penang (also called Areca, or Prince of Wales' Island) lying broad on our port beam. Its chains of forest-clad mountains, gloomy, and overcast with dense masses of cloud, prevented our realizing the charms of this possession of England, such as they have been described by all who have visited it.

On the 12th of April we steered between the Sambelongs, or Nine Islands, and the island of Djara, and caught a glimpse of the lofty well-wooded mountains of the kingdom of Perah.

The channel through these straits is becoming more and more contracted owing to the *débouche* at this point of the river Perah. Shallow sand-banks and small rocky islands impede the navigation, and it is a common precaution for ships to cast anchor at the least approach of foul weather, an operation which is the more readily set about that the water is nowhere above twenty fathoms, but good holding ground throughout the straits. Moreover, the charts of these regions are thoroughly reliable and accurate, while at the most dangerous spot, where a sand-bank with only one fathom of water over it lies right in the tracks of vessels, a light-ship is moored, which we passed on the 13th of April, and continued our voyage through the night in perfect safety.

On the morning of the 14th April, the hill of Ophir (called also Ledang or Pudang), 5700 feet high, lay fair before us. We now found ourselves opposite the town of Malacca. The channel at this point approaches so close to the mainland, that we could easily distinguish churches and houses, and the frigate exchanged signals with the neighbouring semaphore.

Malacca, once the Malay capital, has at present altogether lost its former importance, and of the three English colonies in the Straits of Malacca, usually known as the *Straits Settlements*, is the least important in either a political or a commercial sense. The entire region was, until within these few years, in most evil repute for the atrocious piracies perpetrated here. Natives used to lie in wait in small canoes filled with

merchandise of all sorts, with which they boarded the passing ships, and while these were supplying themselves with fruit and fresh provisions, the former were spying the number of crew, as also the means of defence of the unfortunate vessel; after which it usually happened, that during the night the more defenceless of them, while becalmed or lying at anchor, would be attacked by an overwhelming force of pirates and ruthlessly plundered. Captain Steen Bille relates, that even so late as 1846, he loaded his cannon with shot, and maintained extra vigilance during the night.

We now sped along, still favoured by the wind, during the ensuing night, and on the morning of the 15th April had the satisfaction of reaching the entrance of the bay of Singapore, without once having to lie at anchor in the straits. The landscape that lay outstretched before us was splendid,—lofty wooded islands on the coast of Sumatra, and a whole archipelago of islets lay around us, in the channels between which prahus were sailing about, while Chinese junks, full-rigged ships and barques, were working in or out as the case might be, all intimating the proximity of a great mart of commerce. Equally fortunate as in the straits was our passage through the labyrinth of islands, through which a vessel must wind in order to reach Singapore. And this roadstead itself, what a contrast it presented to the lovely beach of the Nicobar Islands! Here were thousands of ships of all sizes and rigs, and the flags of nearly all sea-faring nations in the world. We found at anchor the English frigate *Amethyst*, and the

screw corvette *Niger;* and having warped ourselves into their vicinity, by 2 P.M. we had cast anchor in 13 fathoms water. Almost immediately afterwards an officer came off from the *Amethyst* to welcome us, and to impart to us the unpleasant intelligence that cholera had been raging in the city for some weeks past, and had also committed great havoc among the shipping in harbour. Even the captain and one of the crew of an English merchantman had succumbed but a few hours previously to this fell scourge, and the vessel had her flag half-mast high as a signal of mourning. This information at once deranged all our plans and projects with respect to Singapore, and had we not been compelled to victual here, we should at once have set sail. However, under the circumstances there was nothing to do but to spend five or six days at Singapore, and this breathing-space we availed ourselves of to obtain as much information as possible both by eye and ear touching this very remarkable colony, and its not less interesting inhabitants.

Singapore.

STAY FROM 15TH TO 21ST APRIL, 1858.

Position of the Island.—Its previous history.—Sir Stamford Raffles' propositions to make it a port of the British Government free to all sea-faring nations.—The Island becomes part of the Crown property of England.—Extraordinary development under the auspices of a Free Trade policy.—Our stay shortened in consequence of the severity of the cholera.—Description of the city.—Tigers.—Gambir.—The Betel plantations.—Inhabitants.—Chinese and European labour.—Climate.—Diamond merchants.—Preparation of Pearl Sago.—Opium farms.—Opium manufacture.—Opium smokers.—Intellectual activity.—Journalism.—Logan's "Journal of the Indian Archipelago."—School for Malay children.—Judicial procedure.—Visit to the penal settlement for coloured criminals.—A Chinese provision merchant at business and at home.—Fatal accident on board.—Departure from Singapore.—Difficulty in passing through Caspar Straits.—Sporadic outbreak of cholera on board.—Death of one of the ship's boys.—First burial at sea.—Sea-snakes.—Arrival in the Roads of Batavia.

THE island of Singapore or Singhapura * is situated at the southernmost point of the peninsula of Malacca, from which it is only separated by a strait nowhere above a mile in breadth.

* City of Lions, from Singha, the Sanscrit for Lion, a title of Indian princes, which we again meet with in Singhala, the kingdom of Lions, as Ceylon is called in ancient records and histories.

It is about 29⅓ statute miles in length from east to west, by 16⅔ in breadth from north to south. The superficial area of the island is estimated at 206 square geographical miles, which will make it about one half larger than the Isle of Wight.

Up to the year 1819, Singapore was a howling wilderness, and the only settlement upon its shores was a couple of wretched Malay fishermen's huts; a lurking-place for the pirates, who at that period made it dangerous to navigate those waters. After the rendition of the Dutch colonies in the Indian Archipelago, which it will be remembered were the property of England throughout the great continental war up to the year 1814, Sir Stamford Raffles, the former Governor of Java, was intrusted with the office of founding on it, as the most suitable spot in all the Malay seas, a free emporium where the general trade in those seas of all the sea-faring nations of the world might be concentrated and exchanged. England had further in view to leave not a single foot to stand on to the Dutch, whose interests in those seas clashed with her own, to obtain an emporium in which to collect all the more important products of the Archipelago for exchange against the teas and silks of China; and, lastly, to procure for the reception and repairs of the ships of war and merchantmen, a suitable harbour, such as, being in the vicinity of the teak-growing countries, would also have the advantage of supplying timber for her ships at any period when there might be in England a deficient supply of oak.

Sir Stamford, having previously examined several other localities, ultimately selected Singapore, and on 6th February, 1819, the English flag was hoisted on this solitary island, thus unsuspectedly inaugurating the beginning of a new era for the sea-faring world! At last, in 1824, came the Treaty of Cerum, by which Holland withdrew her pretensions in favour of England, and Singapore became an inalienable possession of the British Crown for a sum of 60,000 Spanish dollars paid over to its previous owner the Sultan of Djohore, together with a life-rent of 24,000 dollars annually payable to the same Malay chief. The slaves on the island were set at liberty, slavery was entirely abolished, and Singapore proclaimed a Free Port. The importance of Singapore as a site for a colony had already been pointed out and justified a century since by Captain Alexander Hamilton, who visited these seas at the beginning of the 18th century, and in a work entitled "A New Account of the East Indies," describes most circumstantially his stay at Djohore in 1703 on his voyage to China. In that work Hamilton narrates how the Sultan of Djohore wished to make him a present of the island, and how he declined this proposal with the remark that this island could be of no use to a private man, but would be eminently suitable for a colony and an emporium of trade,* because the winds were at all seasons favourable for egress from and entrance into these waters on every side. A hundred years

* Captain Alexander Hamilton's "New Account of the East Indies, 1688—1723." Edinburgh, 1727. 8vo, Vol. II., p. 63.

later, the choice of Sir Stamford Raffles, to whom this relation of Hamilton seems to have been entirely unknown, fell upon the same locality, thus testifying alike to the eligibility of its position, and to the wise forecast of the founder of this British settlement.

Before the arrival of the Europeans in India round the Cape of Good Hope, towards the commencement of the 16th century, the trade of these countries was exclusively confined to the Arabs and Hindoos, who acted as a medium between the far East and Europe. Every island in the Archipelago, in proportion to the abundance and value of its vegetable produce and its foreign intercourse, had one or more harbours, at which the products of the surrounding districts and islands were gathered and heaped up until the monsoon permitted the arrival of the merchant vessels from the West. At the beginning of the fine season, Arabs and Indians entered these harbours in their ships, and brought Indian and other manufactures and merchandise, which they were in the habit of exchanging for gold, gum, spices, tortoiseshell, rosin, jewels, and such like. Acheen in the north of Sumatra, Bantam in Java, Goa in Celebes, Bruni in Borneo, and Malacca in the peninsula of the same name, were the most important of these depôts for merchandise and centres of trade. At present the importance of all these places has faded into history, whereas Singapore, from its singularly favourable geographical position, and the liberality of its political institutions, has made such a stride, as is entirely without parallel in the

history of the world's trade. From a desolate haunt of piratical foes, the island has been converted into a flourishing emporium; about 1000 foreign vessels, and fully 3000 Malay prahus and Chinese junks, flit backwards and forwards annually with all sorts of merchandise and produce, while the value of the goods annually exchanged here amounts to about £11,000,000. Such is the change that has come over the old unhealthy, ill-omened Malay pirate abode: thanks to a clearly defined Free Trade policy! If a doubt should still obtrude itself as to these brilliant results of the utmost freedom and absence of restriction upon trade, it must give way before the spectacle presented to the view of the astonished beholder in the harbour of Singapore, the Alexandria of the 19th century!

Unfortunately, however, our stay in this harbour, so interesting in a scientific as well as in a commercial point of view, was sensibly curtailed by the prevalence of such exceedingly unfavourable conditions of the public health. Hardly had we cast anchor ere an officer of the English frigate *Amethyst* came on board to salute, and to inform us that for several weeks past the cholera had been ravaging the city, especially what is known as the Chinese quarter. In another war-ship then in the harbour, the screw corvette *Niger*, several of the crew had already succumbed to the pestilence; and even in our own immediate neighbourhood was anchored a ship with flag half-mast high, a melancholy signal that the angel of death was once more seeking victims. Our original plan of passing several weeks at Singapore had

of course to be abandoned, and we determined at once to get under weigh, so soon as the ship had been re-victualled and sundry other matters of imperative necessity carefully looked to. Meanwhile the naturalist corps landed, and proceeded to see and examine as much as they possibly could.

The town of Singapore, situated at the southern extremity of the island of the same name, is divided by the river Singapore, on whose banks it is built, into two parts, in the northernmost of which are the churches, the law courts, the residences of the European settlers, and a little further away the native dwellings, as also the Kampong-Klam or Bugis quarter, so called from the number of Bugis from Celebes who congregate there to do business; while on the south bank of the river, only a few feet above the level of the sea, are the warehouses and offices of the various European and Chinese merchants. Still further to the southward and in another small cove, called New Harbour, are the buildings and docks of the Peninsular and Oriental Steam-Ship Company.

Behind the city are visible three hills of inconsiderable height, called Pearl Hill, Government Hill, and Sophia Hill. The middle one, on which stands Government House, rises on the left bank of the river, about half a mile from the seashore, to a height of about 156 feet above sea-level. On Pearl Hill, which commands the Chinese and mercantile quarters of the town, a citadel has been constructed. The environs of the town on every side consist of a rolling sweep of hilly country, diversified in outline by about 70 different

eminences varying in height from 60 to 170 feet, crowned with the elegant villas of the European merchants or government officials, or the residences of wealthy Chinese or Malays. The loftiest point is Bukit Turiah or Tin Hill, lying about the centre of the island, and 519 feet in height. Although accessible in a few hours from the city, it is very rarely made the scene of any excursions, in consequence of the forests which encircle it having for long been frequented by great numbers of tigers. These animals, eager for prey, cross from the mainland by swimming the narrow strait, hardly more than half a nautical mile in width, which separates it from the island. Dr. Logan, the excellent editor of the Singapore Free Press, assured us that till within the last six or seven years, 360 natives had annually been carried off by the tigers! Even at present, over 100 persons a year are killed in the forest by the tigers that prowl there. Shortly before our arrival, in the month of March, four persons had perished by these voracious animals. For an explanation of such horrible occurrences, we must consider the heedlessness of the natives, and the peculiar conditions affecting the mode of agriculture followed on the island. The soil of Singapore is not sufficiently fertile to make the cultivation of land a customary occupation. Even for rice-growing it is found to be unsuitable, so that the greater part of that chief staple of subsistence has to be imported from the neighbouring islands. So far as the island has been cleared, viz. to a distance of about five miles round the city, attempts have been made to

plant nutmeg, clove, and fruit-trees. But the majority of the natives busy themselves with sowing the Gambir and Betel shrubs in the jungle, the leaves of which are readily disposed of at a good profit among the betel-chewing inhabitants of the Indian Archipelago for an ingredient of their beloved masticatory. The mode of cultivating these, however, is very peculiar. As Gambir speedily exhausts the soil in which it is planted, and renders it quite barren, the cultivators find themselves compelled to advance as though by a sort of perpetual emigration. They hew their way into the jungle, where they plant the Gambir (*Nauclea Gambir*),* the withered branches and leaves of which, after it has served their purpose, are used as manure for the *next* shrub planted, the Betel (*Piper methysticum*). After a short time the soil becomes unsuited for this also, and needs several years' rest before it can again be made to produce any crop.

In the prosecution of this thriftless cultivation the natives are compelled to penetrate deeper and deeper into the forest, in order to clear away with the axe spots of virgin soil for the planting of the Gambir. They frequently pass months at a time in the jungle, and with the carelessness characteristic of all southern races, constantly allow themselves to be surprised by wild beasts. Government, however, does not neglect publishing ordinances, by which as far as possible to discourage these formidable invaders. They have offered a

* From this shrub is prepared the drug *Kino*, once much used in the Pharmacopœia, but now displaced by *catechu*.

reward of 50 dollars for every tiger killed. So soon as the track of a tiger has been struck, the natives usually dig a pit fifteen or twenty feet deep, which they cover slightly with grass and brushwood, and fasten close by a goat, a dog, or some other living creature. As soon as the tiger, eager for his prey, seeks to seize the poor animal, the brushwood gives way under him and he falls into the pit, where he is speedily finished with muskets.

The entire population of the island amounts to about 100,000 souls, of which the greater number, say 60,000, inhabit the town itself or the surrounding villages. One meets here with a singular mixture of races, Europeans, Malays, Chinese, Klings (as the natives of the Coromandel coast are called), Arabs, Armenians, Parsees (Fire-worshippers), Bengalees, Burmese, Siamese, Bugis (from Celebes), Javanese, and from time to time visitors from every corner of the Archipelago. Of these the Europeans, although exercising far the largest and most preponderating influence upon the trade of the place, are much the weakest in point of numbers, the entire community not exceeding 300 or 400 on the whole island. On the other hand, the Chinese out-number all the rest, and are still constantly on the increase. Every year, as the N.E. monsoon sets in, in December and January, vast swarms of Chinese flock hither, fleeing from the poverty and distress of their native land. There are individuals, who make a regular trade of importing into Singapore coolies from China and the Coromandel coast. At the port of em-

barkation, each coolie engages with the captain, to serve one year after his arrival in Singapore with a European or native master, and to repay the cost of his passage out of his monthly wages. He usually receives at first 3 dollars a month (about 12*s.* 6*d.*), out of which he lays aside 1½ dol., and so gradually pays off his indebtedness to the ship captain. The passage-money, which a few years back was only about 10 or 12 Rs. (£1 to £1 4*s.*), is at present as high as 20 Rs., or £2. After the first year his earnings may amount to about 4 or 5 dols. a month. If, however, the coolie have repaid his debt, he is free, and may either earn a very good wage as a servant, or start in any business for himself. The facilities for earning money are so great here for men of industry and steadiness, that a few years' stay suffices to convert these naked, filthy, hang-dog looking wretches into clean well-to-do workmen, and some of them even attain a certain status in the community, as planters and merchants. Many a Chinese, who is now an important and wealthy man, possessed not a farthing when he landed on the hospitable shore of the English colony. The number of Chinese resident in Singapore is estimated at 60,000, or nearly two-thirds of the entire population of the island.

We need not feel surprised therefore to find that the long-tailed children of the Flowery Land living in Singapore have begun to develope a certain taste for luxury. They already boast a theatre of their own, a wooden booth, like a gigantic dolls' house, in which actors from China yell out their "sing-

song," while the auditory, penned in within a carefully-locked court-yard, chant a vociferous accompaniment to this somewhat monotonous exhibition. Moreover, Singapore possesses a Chinese temple of such splendour, that one would hardly find its match in the Flowery Land itself. This is called the Telloh-Ayer, situated in the street of the same name, and is decorated with handsome carvings, innumerable mysterious inscriptions, and grotesque figures of stone and wood. The Chinese who conducted us all round were exceedingly friendly, and when, at parting, we slid a few pieces of silver into their hands as a recompense for their trouble, they gave vent to their feelings in repeated chin-chins, a mode of greeting which corresponds to the Salaam of the Mahometan races.

Many of the Chinese of Singapore belong to secret societies (Hóes), the members of which seem banded together for both good and bad objects and for mutual protection. Their rules are so strict, and their slightest infraction is so fearfully punished, that hardly an instance has ever been known of an associate having been denounced or proved a traitor. In the British possessions, where the government attaches no sort of importance to these associations, and suffers them to pass unmolested so long as the laws of the country are not violated, these societies are unimportant, and are productive of no evil consequences; but in the Dutch East Indies, where the government has always kept their subjects in a state of tutelage, and is in a marked degree adverse to the Chinese

settled in their colonies, these secret societies assume a far more dangerous character, and murders on purely political grounds are far from infrequent.

The natives proper of Singapore are Malays, and their language is that most in use for general intercourse and trade. But as open-air labourers they are far inferior to the Chinese, who are much more enduring, more contented, and more sociable. In this connection the following comparative statement, prepared a few years since by W. J. Thompson, Esq., government engineer in Singapore, of the relative values of English and Chinese labour, will be found of much interest. To build a wall in England containing 306 cubic feet would, according to Mr. Thompson's estimate, employ one bricklayer and one ordinary labourer $4\frac{44}{100}$ days, the former receiving 5*s.* 6*d.* per day, the latter 3*s.* 6*d.*, the total expense amounting to 30*s.* In Singapore a similar piece of work, executed by Chinese labourers, would require $8\frac{54}{100}$ days, and the daily wage would amount to 2*s.* $9\frac{3}{5}$*d.* for the bricklayer and 1*s.* $7\frac{2}{5}$*d.* for his assistant, the total expense amounting to 37*s.* 6*d.* Thus, English labour shows an economy over Chinese in the proportion of 52 to 100 in time, and of 4 to 5 in actual expense. The following is also interesting by way of confirmation. It had been resolved to fill up a swamp in Singapore, the material for which was at hand at either extremity. The swamp was 1200 feet long, 1 foot deep, and 21 feet wide. The contract was allotted to the Chinese, and completed in 326 working days, at 13 cents or $11\frac{1}{2}$*d.* a day. An English,

or indeed any other European labourer, would have completed the same in 187 days, so that here also English or European labour in general is more valuable than Chinese or any other Asiatic labour in the proportion of 100 to 57.

These results must not however be held to indicate that the Chinese labourer possesses less physical strength than the European, nor must we leave out of view this element in the calculation, that the one executes his work in a temperate, the other in an excessively hot climate, to which European labourers speedily succumb, or at all events lose their powers and their strength in a very marked degree. Indeed it seems to decide the question in favour of the Chinese over the European labourer, that the former can work without taking any heed for his health in even the most variable temperatures. These instructive comparisons seem to be in so far especially valuable and useful, wherever it is projected to carry out certain undertakings, the cost of which may be estimated, due reference being had to the well-ascertained expense of constructing similar works in Europe.

Next to the Chinese, the Klings, or natives of the Coromandel coast, are in the greatest request as boatmen, coachmen, pedlars, porters, and house-servants, by Europeans as well as by their own successful fellow-countrymen. From their habits of extreme sobriety, they speedily save money, and generally return home, although a certain number continue permanent settlers in Singapore. The Armenians resident here are the most like the European mercantile community;

the Arabs are the descendants of those Mahometan priests and merchants whom the Portuguese found here when they first visited this quarter of the globe, and are recruited from time to time, but on the whole rarely, by fresh arrivals from their mother country.

One very marked peculiarity of the population of Singapore is the enormous disparity between the numbers of the sexes. The proportion of females to males is as one to seven. The most probable explanation of this phenomenon is the circumstance, that hitherto the emigration of females from China has been entirely prohibited, and consequently almost all the Chinese residents, who constitute by far the majority of the whole population, are unmarried. Among them the proportion of females to males is as one to thirteen.

The health of Singapore is not always so bad as at the period of our visit; indeed, judging by perquisitions made for the purpose, the climate may rather be regarded as salubrious, particularly since the immediate vicinity of the town has been so extensively cleared. The outbreak of cholera was entirely new, and on that account an all the more appalling visitation. The temperature is tolerably equal throughout the year. Observations carried on uninterruptedly during five years give an average of 81° 3. Fahr. for the hottest month (May), and of 79° 5. Fahr. for the coldest (January). Once only during the five years (in June) did the thermometer attain a height of 87° 2. Fahr. and once only in January did it fall as low as 74° 8. Fahr. By comparing the present range

of temperature with that of thirty years since, it appears that since the foundation of the settlement it has gained three degrees in temperature, a phenomenon which may be ascribed to the increase of buildings, and to the large clearings for a distance of five miles round the town, and perhaps also to the spot itself where these observations were made being exposed.

There is no regular rainy season in Singapore. Rain falls every month throughout the year, the heaviest falls occurring in August and December. According to observations carried on during four years, the annual rain-fall averaged 93 inches. The tolerably regular distribution of the rain throughout the year imparts to the vegetation a freshness that makes the change of seasons pass almost unheeded.

In Singapore as elsewhere the members of the *Novara* Expedition experienced from all classes of society the most cordial and hospitable reception. Every one bestirred himself to point out to us everything that was worth knowing, or that the city could present of interest or deserving special attention. After a cursory stroll through the most frequented streets, with their dense crowds of people, which sufficiently proved to us that trade was in fact the chief occupation of the inhabitants, we turned our attention to the shops of some of the Mahometan merchants, when our eyes were dazzled with all the most various products of India.

In one of these we were shown some exceedingly valuable diamonds from Borneo, one of which weighed 17 carats, and was worth £4000 sterling, while another of 19 carats, but less

pure and brilliant, was for sale for £2000. The seller, a Mahometan, himself wore on his finger a diamond-ring which our companion estimated at £1000. In the stores of several other merchants we saw the Malay servants sitting cross-legged on the bare floor of the porch, with huge heaps of Spanish dollars before them, which they were busy counting. The Spanish or Mexican dollar is here almost the only medium of exchange, payments being made all but exclusively in that currency, whereas gold, even English, is but sparingly used, and then with ill-concealed reluctance! The utter want of any other recognized medium of exchange than silver makes all extensive money transactions exceedingly onerous, owing to the expense of transmitting the precious metals, in consequence of which any one wishing to pay in a certain sum of a few thousand dollars in cash, must employ a convoy for the purpose of transporting the money!*

Although, as already remarked, the chief business of the island is purely commercial, and although, ordinarily speaking, every branch of industry merges in that predominant occupation, there is yet one manufacture in Singapore which calls for most special notice. This consists in the preparation

* A similar system prevails to this day throughout Hindostan, where the necessity for convoy of specie forms one of the most important items of expense in the maintenance of local police, outlying military stations, &c. And unfortunately such a policy reacts upon the respect of the natives for British rule, for seeing that even the government requires such convoys, they naturally presume that government feels itself insecure, and hence refuse to co-operate in the development of Indian resources.

of pearl, or white sago, from the raw state, which is brought from the N.E. coast of Sumatra, and the N.W. coast of Borneo. Almost the whole of the sago of commerce is prepared here, and all but exclusively by Chinese labour. Sago is chiefly obtained from the pith of several species of palm, but more particularly from the *Sagus Rumphii* and the *Sagus Laevii*, both of which are rather limited in their area of cultivation, and are not, like the cosmopolitan cocoa-nut palm, found in every quarter of the tropical zone, both in the Old and New World, but are indigenous to the Indian Archipelago alone. The trunk of the sago-palm, when felled, is a cylinder of about 20 inches in diameter, and from 15 to 20 feet in length, which, when the woody fibres have been separated, contains about 700 lbs of clear fine fecula. One may form some conception of its extraordinary productiveness on learning that three sago-palms contain as much nutritious matter as an acre of land grown with wheat! One piece of ground of the extent of an English acre planted with sago-palms occasionally yields 313,000 lbs of sago, or as much food as 163 acres of wheat. The sago however is neither as palatable nor as nutritious as it is productive, and nowhere, where rice is in common use, will it be displaced by this article of food. We visited the largest sago manufacture in Singapore, in which the sago, as it comes in the raw state from Borneo and Sumatra, is washed and roasted, when it becomes the pearl sago of commerce. The quantity thus prepared annually amounts to about 100,000 cwt.

Singapore was also the first place where we found an opportunity of becoming acquainted with opium-smokers, and of observing the noxious effects of this custom, which was forced upon the Chinese for the purpose of compelling commercial relations. Although in almost every street in Singapore there are houses in which opium is sold and can be smoked (the so-called "Licensed opium shops"), there is, in order to keep more control over it, only one single place where the opium is prepared for smoking from the raw material, called by the English the "Opium farm," from which all retail dealers must purchase their supplies of stock.

Before describing our visit to this curious factory we shall indulge in a few observations upon a plant whose intoxicating, poisonous milky sap produces such singular effects upon the human system. The poppy (*papaver somniferum*), is chiefly grown in Hindostan in the districts of Benares, Patna, and Malwa. Its cultivation is exceedingly arduous, and very precarious, since the tender young plants require constant care and attention in the way of repeated watering, as well as weeding and turning up the soil, besides which there is the ever-present danger of its destruction by insects, or its loss through storm, or hail, or untimely rains. The plant blooms in the month of February, and three months later the seed is ripe. The incision into the capsule however is made three or four weeks earlier, so soon, in short, as it is covered with a fine white mealy dust. The instrument employed in this operation has three prongs with very sharp points, with

which the plant is carefully scratched. Each plant is thus tapped for three consecutive days, the operation beginning with the first warm beams of the morning sun; the milky sap is scraped off in the cool of the next morning, and on the fourth morning each plant is again tried as to whether it still exudes sap, but usually it proves to have been exhausted. The juice as scraped off in its coagulated form, is put into a cask along with linseed oil, in order not to get too quickly dry, and then is made by hand-kneading into round flat cakes, of about four pounds' weight, and about five inches in diameter, which, enveloped in poppy and tobacco leaves, are spread out to dry in earthen dishes, till ready for purposes of commerce. In this stage the opium is packed in boxes of ten cakes or about 40 lbs, and thus passes from the hands of the grower or the speculator at certain fixed prices into those of the agents of the East India Company. The very anxious and precarious cultivation of the poppy must prove far less remunerative to the proprietor of the land than the much easier task of raising tobacco or sugar-cane, and it is only the long-established but most impoverishing system of payments in advance, pursued by the agents of the East India Company, that keeps the Hindoos engaged in opium cultivation.*

At the opium farm in Singapore we saw this same coagulated juice, as obtained from the poppy, converted into opium

* The net produce of an acre of land grown with poppy amounts to about 20 or 30 rupees, producing about 30 lbs of opium. The oil extracted from the seed-vessels of the plant gives a return of from 2 to 3 rupees per acre.

suitable for smoking, which is called *chandú*, the process consisting in its being exposed to the action of heat in large semicircular brass pans, strained through filters, and once more exposed to a low heat, until it finally coagulates into a consistency strongly resembling treacle or syrup. The whole manipulation occupies from four to five days. A cattie or ball of this thickened poppy-juice costs the manufacturer about 20 dols. From ten such balls of the raw sap, or about 40 lbs, which is the usual weight of each "chest," as imported from Hindostan, 216 "tiles" or about 18 lbs of opium are obtained upon an average. We saw the Chinese dealer place in one of the scales a Spanish dollar, instead of a regular weight, and measure off a corresponding weight of opium in the other. A *Chí*, weighing about $\frac{1}{16}$ oz., the ordinary quantity consumed by an opium-smoker, costs $17\frac{1}{2}$ cents, or nine-pence. The duty levied upon this manufacture gives the government a revenue of £3000 a month, for the exclusive right of preparing opium fit for smoking, *chandú*, for consumption on the island.

As often as the apparatus is called into activity, the Chinese employed in the preparation of the opium, in pursuance of what seems with them a regular custom at the commencement of any spell of work, commit to the flames, after repeating a certain set of formulas of prayer, a number of octavo-sized leaves (*Tschni-tschni-sóa*) of paper printed upon one side only, and occasionally provided in very large quantities: on these fabrics of the roughest material are printed

sometimes prayers in Chinese, sometimes all kinds of drawings, intended to express the wishes of those making the offering, and which ordinarily represent in very sketchy outline those objects which they pray their deities to bestow on them. In thus burning, in a copper vessel specially prepared for the purpose, not unlike the baptismal font in a Christian church, these small slips of paper, the Chinese operative believes that his petition ascends to heaven as smoke, and so comes under the cognizance of his protecting gods. Similarly in all temples and pagodas, large quantities may be found stored away of these paper intercessors with the Chinese gods, intended for the use of believers, or rather of those who make profession of faith.

The workmen of the opium farm have a part of their wages paid in opium. The greater number are themselves opium-smokers, and thus are all the more surely attached to the manufacture. We saw a number of these fellows lying stretched out on straw mats, in wretched filthy-looking dens of rooms, with blue curtains barely concealing them from view, and the spirit-lamp placed conveniently near to enable them from time to time to heat the *chandú*, the smoke of which they inhale through a peculiarly constructed pipe (*Yeu-tsiang*). The quantity of opium taken up at each dip by the instrument used, a three-cornered, flat-headed sort of needle specially adapted for the purpose, is about the size of a pea. The practised opium-smoker holds his breath for a considerable time, and passes the smoke through the nostrils.

The taste of the half-fluid juice of the poppy is sweetish and oily, but the odour of the *chandú* when heated, which one of the work-men addicted to smoking insisted on our regarding as one of the most valuable of perfumes, is so disagreeable as almost to cause nausea. We saw numbers of smokers, athwart the filthy gossamer-like curtains, utterly stupefied, and lying carelessly stretched out on the hard bedsteads, the pipe fallen out of their hands, and the lamp on the table in front of their couch extinguished. They, however, did not want the curtain for the purpose of preventing their being disturbed in the luxurious enjoyment of their beatific dreams; for they continued in a state resembling death itself, from which hardly anything could possibly rouse them so long as the effects of the poisonous drug lasted. Others of the smokers were so affected by it as to have utterly lost their senses, and seemed on the whole entirely indifferent to all that was passing around them. One of the workmen, who was in a high state of excitement, and was uncommonly talkative, informed us however that he had to smoke about one shilling's worth of opium ere he could feel its effect, that there was nothing more annoying or insupportable than mere partial stupefaction, when one had no more money wherewith to buy opium so as to be able to get into a proper state of somnolence. The entire system at such times gets into a frightful state of irritation; there is severe headache, a sensation of pressure on the stomach, nausea, in a word all the ill-

effects of the use of opium, without any of its more agreeable sensations. The state of intoxication and drowsiness usually lasts from forty to sixty minutes, when consciousness gradually returns, without any ill effects being experienced at the moment from the inhalation of the poison.

In Singapore, where comparatively high wages are paid, and the Chinese population is the most numerous, the annual consumption of opium amounts to about 330 grains per head. In the Island of Java, where, in consequence of certain limits prescribed by government, the Chinese element amounts to but $\frac{1}{100}$th of the entire population, the consumption is hardly forty grains per head. Even in China, where this perilous narcotic is consumed in such enormous quantities, the amount sold only indicates 140 grains for each smoker, which however is chiefly attributable to the poverty of the populace, by whom this luxury is unattainable. Unfortunately we could get no reliable information as to the number of opium-smokers, and the quantity of opium consumed, in Singapore. Mr. Allen, a North American missionary, estimates the number of persons who surrender themselves to this practice throughout the Chinese Empire, at from 4—5,000,000, who annually consume about 50,000 chests of opium. The quantity consumed by each smoker daily varies in an extraordinary degree. At first the beginner cannot inhale above two or three grains at a time, but gradually, as he becomes habituated, the dose increases, till the confirmed smokers

consume as much as 100 grains daily!! Many Chinese spend two-thirds of their earnings in the purchase of this drug, which has become for them a necessity of life.

The practice of eating opium in the form of pills, which prevails in every Mahometan country in the East, and has in a special degree been readily adopted by the disciples of the Koran, in consequence of the prohibition of wine, would seem, judging by the researches of physicians, to be much less injurious and much slower in affecting the human system than smoking the opium, or otherwise bringing it directly in contact with the lungs, while the effects of the former practice is likewise different.

We shall have an opportunity, when describing our stay in Chinese waters, to revert to this most remarkable and most profitable, but at the same time most iniquitous, monopoly of the (late) East India Company, which crushes millions of human beings in the most appalling and hopeless of all slaveries, and against the continuance of which the Chinese government has repeatedly but ineffectually set its face. The words of the idol-worshipping Emperor of China, when in 1840 he was solicited to convert the importation of opium into a source of revenue to the state, were worthy of a Christian monarch: "It is true," said the Chinese ruler, "I cannot hinder the importation of this subtle poison; infamous men in the lust for gain will out of covetousness or sensuality set at nought the fulfilment of my wishes;—but they shall

never induce me to enrich myself by the vices and the wretchedness of my people!"

Despite the very small proportion of Europeans resident in Singapore, and that almost the entire time of those few seems to be absorbed in business, there is nevertheless considerable intellectual activity. Several newspapers in the English language, among which the "Singapore Free Press," edited by Mr. A. Logan, occupies the foremost rank, supply information as to all that is worth knowing in every part of the East Indies, while the "Journal of the Indian Archipelago," which has been for many years so ably and carefully conducted by the well-known and widely-famous J. H. Logan (brother of the editor of the "Press"), is a veritable mine of information for the naturalist, who wishes to make the history of the Indian Archipelago and its inhabitants the object of his study. It contains exceedingly useful data for extending our knowledge of these very remarkable countries, susceptible as they are of such extraordinary development.

The colony also boasts a Museum of Natural History adjoining a library with several thousand volumes, and a reading-room, copiously supplied with newspapers and periodicals, the whole forming what is called the "Singapore Institution." This enterprise was founded by shares of 40 dollars each, and is supported by an annual subscription of 24 dollars by each member, which confers the privilege of using the well-selected library of books, and a great number of English and French papers and periodicals. The small ethnographic

collection consists chiefly of specimens from Borneo, Sumatra, and the adjoining islands.

Among the educational institutions most deserving of attention and recognition must be specially noticed the school for the instruction of Malay boys and girls, under the management and preceptorship of that most deserving missionary, Mr. B. P. Keasberry, who has pursued a career of useful activity in this Archipelago during thirty years past. The parents of the children taken in here have to contribute to their support, and to leave them there for at least ten years, under the affectionate spiritual care of the missionary, and must not remove them till after the expiry of that period. This condition was rendered necessary by the fickleness of the Malay nature, which otherwise would frequently withdraw the children from the supervision of the missionary at the very moment when they were beginning to become amenable to the influences of instruction in Christianity and civilization. The Institution is supported partly by voluntary contributions, partly by the profits of a printing business, in which, however, hardly anything is printed except educational and religious works in the Malay language. Mr. Keasberry was so kind as to present us with a small collection of the works thus published during the past year, comprising among others a dictionary of the English and Malay languages, the New Testament, a volume of Natural History, a Manual of Geography, a Universal History, a Biblical History, and numerous educational works in Malay for the use of the pupils.

In the course of a visit we paid to the Police Court we had the pleasure of becoming acquainted with Mr. Windsor Carl, the well-known author of numerous valuable works relating to the Indian Archipelago and the Papuan Negroes, a gentleman whose career in life has been of the strangest, at present holding the position of magistrate in Singapore, where his great experience and his thorough acquaintance with the Malay language must be of the utmost service to government. The audience assembled in the Court room, in which only causes under 50 Rs. are tried, consisted for the most part of Chinese. Almost all the officials, clerks, inspectors, and policemen were coloured. In one month 414 causes came on for trial, of which 315 were disposed of by the imposition on the culprits of fines amounting in the aggregate to 5975 Rs., but of this sum only 5105 Rs. were realized. The largest number of sentences are passed in March, because the Chinese celebrate the New Year on the first day of that month, and accordingly the largest number of cases of assault, &c., occur at that period. The police *employés* registered in that period above 100 cases of transgressions of the law. The New Year is however, as must be remembered, the solitary festival which John Chinaman takes out of his appointed work, since recognizing as they do neither Sunday nor feast-day they continue hard at work for all the rest of the year. The majority of decisions refer to prohibited games; and whoever knows the inextinguishable love of the Chinese populace for spending their time in gambling, will readily comprehend

how in a single year there occurred above 2000 cases in which the law was violated. While we were in the justice-room, a paper was handed in to the presiding magistrate, in which an English sailor, at that moment in hospital, urgently requested that he might leave the same, inasmuch as he felt no longer sure of his life, owing to the numbers daily brought thither to die of cholera. In fact the hospital, and the localities adjacent, seemed to be the spots most seriously visited by the pestilence, so that the prayer of the petitioner to be removed from that neighbourhood was not altogether unfounded.

One highly interesting establishment, deserving of universal imitation, is the penal colony for criminals sentenced to transportation for life from all parts of India, and known as "The Convict Settlement." In order to comprehend the object and tendency of this institution, it seems necessary to premise certain remarks upon the political relation of Singapore to India at large. Singapore in conjunction with the colony of Malacca, which gives its name to the entire peninsula, and the island of Penang, including the district of Wellesley, form that range of British settlements in the Straits of Malacca which is usually known to the English as "The Straits Settlements." Up to quite a recent date, these colonies, founded almost exclusively in the interests of British commerce, were under the authority of the Indian government, and were in fact controlled from Calcutta. To the Directors of the East India Company, however, these settlements, of whose future destiny the mother country has hitherto taken but little heed,

notwithstanding their enormous political and commercial importance, appeared to be specially adapted as a place for maintaining common criminals, as also the more dangerous class of political offenders, and accordingly converted these settlements into penal colonies for the Indies, of which that of Singapore is the most important.

The director of this institution, Captain M'Nair, had the kindness to accompany the members of the Novara expedition through the extensive buildings, for the most part only one storey high, but well adapted for this purpose, and to furnish us with much information on the various particulars and special matters of interest relating to the establishment. Ever since the year 1854, the wretched, confined, wooden huts thatched with straw, in which up to that period the unfortunate criminals were confined, have been removed, and in their stead lofty, airy, good-sized apartments have been substituted. At the period of our visit in April 1858, there were over 2000 transported for life, and 245 sentenced to various terms of from five to ten years, confined here. All the public buildings of the island, churches, hospitals, barracks, works in the streets, sometimes constructions of a most expensive nature, were executed throughout by criminals. After sixteen years' good conduct, the prisoner was entitled to a "ticket of leave," authorising him to settle within the jurisdiction of the island as a free colonist, coupled with the condition of presenting himself once a month before the superintendent of the settlement. In case of bad conduct,

or failure, or irregularity in fulfilling such stipulations, these concessions are revoked. All the overseers of the convict settlement, who receive monthly pay at the rate of from one to two dollars, are prisoners who have already given proof of their desire to return to a better mode of life, and it is well worth remark, that the 2000 convicts, consisting for the most part of the very dregs of the various Indian races, and condemned for grave crimes to perpetual imprisonment, are under the charge of a single white turnkey, and by him maintained in perfect order and propriety of demeanour. Besides this one official there is only a small detachment of Indian soldiers, from twelve to fifteen in number, stationed at the settlement as a measure of precaution. The best evidence of the excellent system on which this institution is administered, will be found in the published reports of its health, from which it appears that of the 2000 there confined, there were but forty sick at the very period when the cholera was committing such terrific ravages in the town among the poorer classes, and the change of the monsoon had been accompanied by great sickness and general unhealthiness. The convicts go to work at six every morning, and return to the barracks about 4 P. M., the rest of the day being spent in preparing their victuals, consisting of rice, vegetables, cayenne-pepper, and fruit. As most of those confined are Hindoos and profess Brahminism, they bathe several times a day, in a large tank filled with excellent water. This wise religious custom must in such a sultry climate conduce in a marked

degree to the preservation of their health, by its beneficial and refreshing action upon the frame.

Some of the convicts are also employed in manufacturing cordage, ropes, twine, &c., of the fibres of the wild plantain (*Musa textilis*), the Ramé-shrub (*Boehmeria nivea*), and the wild pine-apple (*Bromelia Ananas* or *Ananassa Sativa*). All these textures are of excellent quality, and possess all the best properties of Russian hemp-fabrics, at a considerable reduction of cost.

In the dormitories the convicts are not classified by nationalities as during the labours of the day, but according to the nature of the offences for which they are incarcerated, so that in one division all the thieves are together, in another all the homicides, in a third all those convicted of arson, &c. Although from a psychological point of view much might be urged against the judiciousness of such a system, yet, as we were informed, this method of confinement by classification of offences exercises no prejudicial effect upon the moral amelioration of the convicts, but on the contrary most encouraging results have been observed to arise from its operation. Among others we were told of a Hindoo from the Malabar coast, a convict for life, who after sixteen years' confinement received permission to settle on the island as a free colonist. By industry, ability, and some fortunate speculations, this man in the course of years acquired a large fortune. He now felt an intense yearning to revisit his own home, and expressed his willingness to present a large portion of his newly acquired

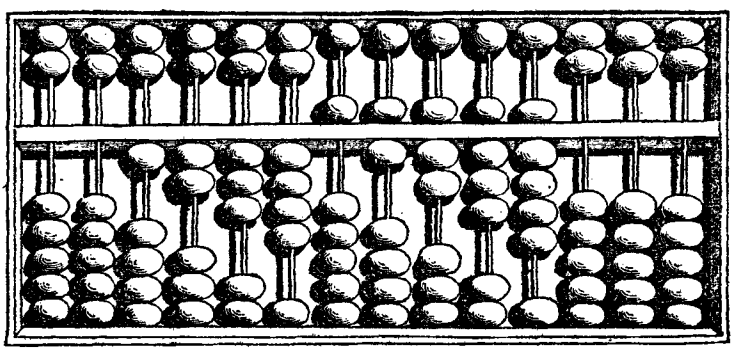
wealth for such a permission. But the law was explicit upon this point. Only a free pardon from the Governor-general of India can as a rule avail to make such an exception, which is of but rare occurrence. This he actually succeeded in obtaining after-repeated supplications, and this "fortunate unfortunate" was at last permitted to return to his longed-for home. It is worth noting that of the 2245 prisoners, only fifty are of the female sex, chiefly Hindoo women from Bengal. Among those imprisoned while we were there, we remarked three white men, who had been sentenced to several months' confinement for riotous conduct and drunkenness. Surrounded as they were by these bronzed half-savage Hindoo offenders, these men made a doubly painful impression upon Europeans.

As the prevalence of disease in the town and harbour made it especially desirable that we should as speedily as possible change our quarters, in order not to be surprised by a visit on board from a guest so formidable, we made all possible efforts to complete with the utmost dispatch the revictualling of the ship, and transact whatever other business was necessary. For this purpose we were recommended in several quarters to employ a Chinese merchant, whose name is already favourably mentioned by Commodore Wilks on the occasion of his visiting Singapore in 1842. This was Whampoa, a ship-chandler, who indeed in similar departments of trade carries on by no means insignificant competition with the long-established English firms. His business is unques-

tionably the most extensive in this line in Singapore, and furnishes a striking example of what Chinese industry, economy, and perseverance are capable of. Immense quantities of provisions and ship-stores are accumulated in his extensive warehouses, so that he can supply orders to any extent in an incredibly short space of time. Within two days, Whampoa had completely victualled the ship for six months, besides supplying her from the adjoining stream with 100 tons of good water, which was brought alongside in boats specially constructed for the purpose, and thence pumped through hose into the iron water-tanks in the hold, an operation which in any European port would have taken thrice the time required here. Moreover all the articles supplied by Whampoa were of the best quality, and proportionally moderate in price. He employs none but Chinese, with long tails, and black silk apparel. All the books are kept in the Chinese language, and even the additions and subtractions are not made in the European method, but by the Chinese *counting* board, that is, by shifting a number of wooden beads or rings, which run in different rows, and have a variety of values. This reckoning-board consists of an oblong frame, divided in its length by a partition into unequal divisions, in the larger of which are hung five, in the smaller two, beads upon metal cross wires. Each wire with the seven beads running upon it constitutes a single row, and in each such row, a single bead of the smaller division is equal in value to the five corresponding beads in the larger compartment;

while, just as in the Russian reckoning-board, each row represents a value ten-fold greater or less with reference to the two arms adjoining it on either side. On the Chinese board the number of cross wires is not always the same, but depends upon the extent of the calculations intended to be made upon it.*

Accordingly when a Chinese wishes to make a calculation upon his reckoning-board, he lays it crosswise before him, with



the large compartment next himself, pushes the beads of the two divisions to the edge of the frame, whence, as the process of calculation may require, he shifts them into the middle against the partition-wire, or pushes them back again. In

* Among the valuable contributions of the Russian Embassy to Pekin, respecting China, its people, its religion, its political institutions, its social peculiarities, &c., there is one long and very copious treatise upon the Chinese reckoning-board, and the method of using it. See the German translation of the work by Dr. Karl Abel, and F. T. Mecklenburg. Berlin, F. Heinicke, 1856, vol. i. p. 295.

the former case the beads are said to "count on the board," in the latter to be "off the board." Consequently, in order to have 1, 2, 3, and 4 "counting," a corresponding number of beads in the larger compartment must be pushed away from himself till they reach the partition; to mark 5, he similarly draws towards himself a bead in the smaller compartment, and as 6, 7, 8, and 9 are formed by the addition of 5 and 1, 2, 3, and 4 respectively, these will be marked by adding one bead from the lesser compartment to the requisite number of beads in the greater. The tens are indicated by the beads of the next wire to the left; the hundreds by the next again to that, &c.

Within his own house, Whampoa lives entirely in the European fashion. Plentifully blessed with this world's goods, he displays a degree of luxury such as we are unaccustomed to see save in the most elevated circles of society. One of his properties, which is several miles in circumference, has a spacious, elegantly furnished mansion with a splendid colonnade, a beautiful flower-garden, and a perfect menagery of useful domestic animals. Within the house all the arrangements are European, with the exception of the oval doors, communicating between the great saloon and the ante-chambers, which are pushed into the wall on either side, and have a very surprising effect. In the evening, especially when the saloon is illuminated, if a person passes through this oval entrance, the effect is as of a life-size portrait set in a golden frame. It would not be a bad idea to introduce this Chinese

form of door-way into our European residences and country-seats, and it is assuredly not the only improvement in the decorative art which we could borrow with advantage from the Chinese. Whampoa's own favourite habitation is about four miles outside the town, and presents a curious admixture of European comfort and taste with Chinese notions of ornament. In the saloons, adorned with a quantity of neat fancy ornaments, are suspended from the walls verses and proverbs of the most renowned Chinese poets, all written on long elegantly illustrated rolls of paper. Our host also showed us a variety of objects which had been presented to him by foreign ship-captains, officers of the navy, and even singers, as the late Mrs. Catherine Hayes Bushnell, whom he had shown much attention to. A banquet, to which we were invited by this hospitable Chinese to meet a number of the most prominent commercial magnates of the colony, was served entirely in the European style. The viands were cooked by a Chinese cook, in the English and French styles, only the dessert came part from Japan, part from China, and consisted of a variety of fruits, which were utterly unknown to the eye and the palate of the European guests. Our Chinese host seemed quite at home in doing the honours. Although outwardly a Chinese of the most orthodox stamp, with shaven head, (except the long tail reaching almost to the earth,) and his body robed in a black silken stuff, he drank to each of his guests in good old English style, and seemed as

little afraid of Sherry as of Champagne. Indeed, we even had toasts, in the course of which this Chinese friend to foreigners remarked in English, that any amelioration of the present critical condition of his native land, can only be effected by the progressive influence of the British government. Whampoa is in all probability the first Chinese who has sent his son to Europe.

On the very last day of our stay in Singapore, a melancholy accident occurred on board. One of our sailors named Rossi, while unbending a sail for the purpose of repair, fell from the fore-yard on the forecastle, where he lay insensible, and died a few hours afterwards. Latterly repeated instances had occurred at short intervals, of the sailors, while working at various elevations, losing hold and falling on deck, but none of these had had such a tragical result as the present, and a few slight injuries was all the penalty the sufferers received for their carelessness. Singularly enough, such accidents mostly occur to the able seamen, because that class usually feel themselves as secure while resting on the foot-ropes, and working among the masts and sails, as on the ground itself, and from their carelessness come much more frequently to grief, than their comrades less experienced in manœuvring among the cordage. Rossi was reverently committed to the earth in the Catholic burying-ground of Singapore, and arrangements were at the same time made for the erection of a small grave-stone over his distant resting-place,

informing the visitors to this "Court of Peace," that below reposes a member of the *Novara* Expedition, who had lost his life in the discharge of his duties.

As we were now at the season of the change of monsoon, at which period the always difficult navigation of the narrow seas between Singapore and Batavia demands an unusual degree of carefulness, in consequence of frequent squalls, we engaged a pilot, who for a stipulated sum of 175 dollars was to convoy us to the next station on our voyage. Captain Burrows, as our pilot was named, had the reputation of being a specially competent, thoroughly trustworthy person, who for a long period had navigated these waters in his own ship, and, as we were informed, had, owing to some unfortunate speculations, been compelled to become a pilot of other vessels, after having for years sailed in command of his own ship. He had already come on board with his traps, but, as wind and tide were both unfavourable, he obtained permission to return to shore till sunset. This however the pilot did not do, and on the following morning, finding he did not come off despite our signals, we set sail without him about 9 A. M. with favourable wind and tide. No one could account for the default of a pilot so strongly recommended on all hands, particularly as all his baggage had remained on board, and must now of course make the voyage to Batavia. For a moment we conjectured that he had immediately on landing been seized by the dread distemper, only it seemed improbable we should not have been informed of such a catas-

trophe. And in fact it afterwards appeared that his having missed us was entirely due to his own inattention.

We at first had intended to pass through the narrow strait of Rhio,* by which the route is materially shortened, but as the squally weather had fairly set in, while the breeze had crept round to the S.E., and the tide set strong to the northwards, we abandoned this plan, and decided on sailing through the channel between Horsburgh light-house and Bintang, so as to pass to the eastward of this island as far as Gaspar Straits, which however we only reached the following day, owing to light fitful breezes from the northwards. So soon as we entered Gaspar Straits we found the sea, which is here of no great depth, never exceeding 25 fathoms, partly covered with trunks of trees and seaweed, while the water had lost its transparency and was of a dirty green colour.

At 10 A. M. of the 25th April, we crossed the equator for the third time, and the same day about 11 P. M. were in sight of the rocky island of Tothy, a rain squall from the N.E. blowing at the time. We passed between this island and the dangerous because invisible Vega Rock, just below the surface of the sea, and found ourselves in an archipelago of islands and shoals requiring the utmost vigilance in navigating ships of large size. But the moon, "the seaman's friend," shone brightly at night, and the well-known transparency of the air in tropical countries enabled us

* The Rhio group of islands is about 50 miles S.E. of Singapore, the most important of which is Bintang, with a town of the same name.

even during the hours of darkness to make out with perfect distinctness islands lying 25 to 30 miles distant, so that we were by these means, coupled with occasional casts of the lead, enabled on every occasion to make out with sufficient exactness at what point we had arrived. We were so lucky as to have never once throughout this intricate navigation been compelled to cast anchor (as is so frequently the case here), and thus succeeded in overhauling in Gaspar Straits more than one merchantman, that was a far better sailer than the *Novara*.

On 30th April in 2° 48′ S., and 107° 16′ E., we celebrated the anniversary of our departure from Trieste, with hearts filled with gratitude to the illustrious projector of an expedition devoted to such lofty aims.

Although during our stay in Singapore the cholera had not alone carried off its victims in the town, but also in the harbour, especially in the screw-corvette *Niger*, anchored in our immediate vicinity, which lost at the rate of about a man daily till she changed her moorings, and ultimately had to put to sea (which under such circumstances gives hope from the very first for a change for the better in the requisite sanitary conditions for restoring to health), yet the crew of the *Novara* seemed destined to escape the slightest evil effects from our six days' stay in this plague-stricken harbour. But the result did not justify these expectations. Five days after our departure from Singapore, just as we

were entering Gaspar Straits, one of the ship's boys fell ill with all the symptoms of the Asiatic pestilence, and two days after the man appointed to attend him was similarly seized. Every necessary precaution was taken, the crew were kept as much as possible on deck, the band played frequently, in order to keep up cheerfulness, and thus by great good fortune the malady was confined to the two individuals seized. The attendant ere long recovered, but the lad, after the choleraic symptoms had subsided, gradually fell into a typhoid state, under which, despite the utmost medical skill, he succumbed on the afternoon of May 4th. Owing to the rapidity with which decomposition sets in in organic structures in these hot latitudes, it was at once arranged that the body should be committed to the deep the same evening. It was the first occasion throughout the voyage that we had to perform this sad but most impressive ceremony. The officers and crew mustered on the deck. The body wrapped in an ensign lay upon a platform, close to the man-ropes on the starboard side. The chaplain prayed over the corpse of one so young, about to rest in the bosom of ocean far from friends and family, after which there was a dull hollow sound; the sea had got his prey, the waves closed with sullen glee over their booty,—and all was over!

In the course of the passage we also celebrated a funeral service on board for Austria's great, never-to-be-forgotten commander, Field-marshal Radetzky, of whose death we had

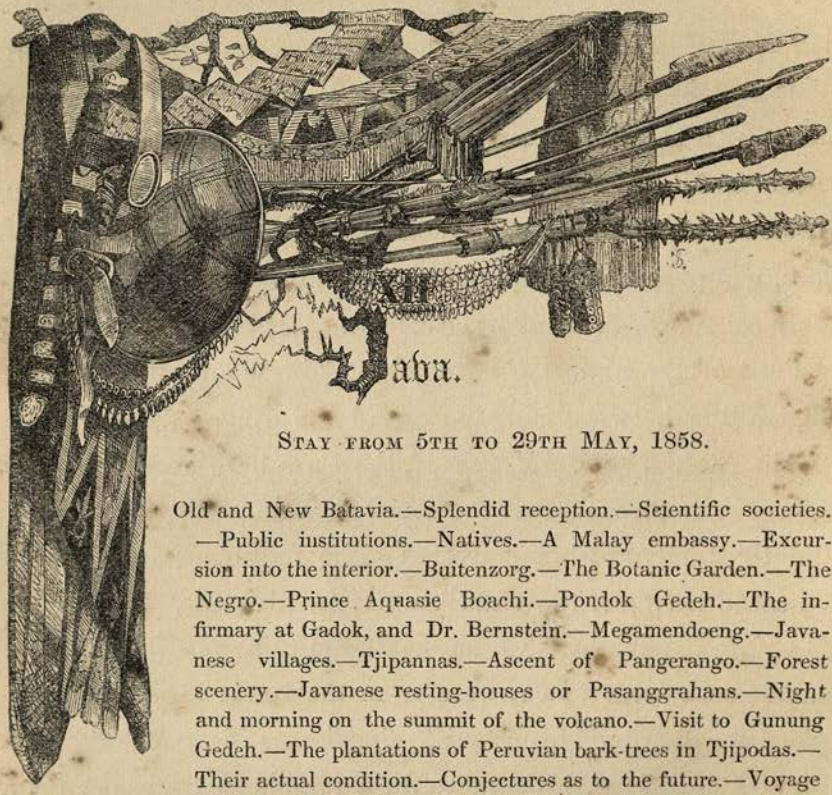
shortly before been apprized. As far as circumstances admitted, everything was done to celebrate this solemn duty in a befitting manner.

Several times during this part of our voyage, owing to the slight depth, averaging only 14 fathoms, of the Gaspar Strait, we observed sea-snakes basking on the surface of the sea, and letting the waves roll them lazily forward, several of which, about four feet long, were caught in a common insect-net.

At last, on the afternoon of May 5, we anchored in the roads of Batavia, in $6\frac{1}{2}$ fathoms, mud bottom. The aspect of the roads, especially in bad weather, is rather melancholy, the coast being low and swampy, and densely covered with mangrove-bushes, through which glittered a portion of the red-tiled roofs of the lower ancient city of Batavia, now abandoned on account of its insalubrity. Under a more cheerful sky the country round would of course assume a more agreeable and even imposing appearance, when the outline of the gigantic volcanoes of Java come into view in the background, with their heavenward towering peaks, partly covered with snow, permitting us to form some faint conception of the prodigality of Nature in this, the most beautiful island of the Malay Archipelago.

In the roads of Batavia we found much less bustle and animation than one could anticipate, considering the favourable situation and immense importance of the place. A short distance from us lay the Dutch frigate *Palembang*, carrying the

flag of a Vice-admiral, and the steam-corvette *Gröningen*, besides which we counted some sixty foreign merchantmen, and over a hundred native boats and coasting vessels. This rather small evidence of commercial activity is the more noticeable when one has just come from the free port of Singapore, where several hundred ships are always lying at anchor, sporting the flags of every sea-faring nation, without taking account of the almost innumerable Chinese and Malay coasters, trading between Singapore and the other islands of the Sunda Archipelago. Moreover, there are here no small boats plying to and fro, because the communications between the city and the roadstead being over a space requiring an hour and a half to traverse, the transit is necessarily dear, and remains therefore confined within as small limits as possible. For a small boat with two rowers from the roads to the landing-place the charge is from four to five florins (6*s.* 8*d.* to 8*s.* 4*d.*), and 3½ florins (5*s.* 10*d.*) more for a vehicle to transport them to the town. For this reason no artisans, trades-people, or washerwomen will come off to where the shipping is at anchor, to take orders—every commission of whatever nature must be executed in the city itself. Here we lay at anchor, an Austrian frigate, surely a most unwonted visitant, from the afternoon till the following morning without one single boat coming off to visit us!



Java.

STAY FROM 5TH TO 29TH MAY, 1858.

Old and New Batavia.—Splendid reception.—Scientific societies.—Public institutions.—Natives.—A Malay embassy.—Excursion into the interior.—Buitenzorg.—The Botanic Garden.—The Negro.—Prince Aquasie Boachi.—Pondok Gedeh.—The infirmary at Gadok, and Dr. Bernstein.—Megamendoeng.—Javanese villages.—Tjipannas.—Ascent of Pangerango.—Forest scenery.—Javanese resting-houses or Pasanggrahans.—Night and morning on the summit of the volcano.—Visit to Gunung Gedeh.—The plantations of Peruvian bark-trees in Tjipodas.—Their actual condition.—Conjectures as to the future.—Voyage to Bandong.—Spots where edible swallows'-nests are found.—Hospitable reception by a Javanese prince.—Visit to Dr. Junghuhn in Lembang.—Coffee cultivation.—Decay in value of the coffee bean of Java.—Professor Vriese and the coffee planters of Java.—Free trade and monopoly.—Compulsory and free labour.—Ascent of the volcano of Tangkuban-Prahu.—Poison Crater and King's Crater.—A geological excursion to a portion of the Preanger Regeney.—Native fête given by the Javanese Regent of Tjiangoer.—A day at the Governor-general's country-seat at Buitenzorg.—Return to Batavia.—Ball given by the military club in honour of the *Novara*.—Raden Saleh, a Javanese artist.—Barracks and prisons.—Meester Cornelis.—French opera.—Constant changes among the European society.—Aims of the colonial government.—Departure from Batavia.—Pleasant voyage.—An English ship with Chinese Coolies.—Bay of Manila.—Arrival in Cavite harbour.

IN order to get from the roadstead of Batavia to the "Stad Herberg," the sole landing-place for boats, distant some miles

from the open sea, it is necessary to steer for some distance up the canal-like channel of the Tjiliwoeng (pronounced *Chiliwung*) River. Old Batavia (Jacatra), built by the Dutch in 1619, on an extremely swampy and most unhealthy spot; is at present entirely abandoned by the white population, and the numerous handsome edifices still standing there are now only used as warehouses, counting-houses, and offices generally. Where in days of yore a hundred thousand human beings bustled to and fro, there are at present dwelling but a couple of thousand wretched, poverty-stricken Portuguese and Javanese. The Dutch in selecting such a site undoubtedly took their own Amsterdam for a model, and the houses were accordingly built as close as possible to each other, and several storeys high, a mode of building eminently unsuited to a tropical climate, and accordingly adding another element of insalubrity. The thick fog, which every evening at sundown spreads over the city, situate as it is hardly above the level of the sea, is not only very injurious to Europeans, but proves quite frequently fatal, so that by 5 P.M. old Batavia assumes the appearance of a city of the dead, and a regular emigration takes place in waggons, on horseback, or on foot, to the more elevated and therefore more healthy parts of the town, to Ryswick, Molenvliet, Weltevreden, &c., where during the last twenty years an entirely new and very elegant settlement has sprung up. Handsome villas rise amid the blooming fragrant gardens, and everything is arranged in accordance with the requirements of a tropical climate; and

of an evening, when the low verandahs and beautifully furnished drawing-rooms of these airy, well-ventilated mansions are profusely lit up, and filled with a gaily-dressed social circle, while numbers of equipages, carrying torches, flit through the wide streets, the whole scene has quite a fairy-land appearance. The gloom without makes the dazzling brightness within-doors still more marked, and renders the law a perfect boon, by which no native, so soon as it becomes dark, is permitted to walk through the streets unless he carries a lighted torch (*obor*). Owing to the distance intervening between each house, Batavia, although numbering only 70,000 inhabitants, apparently covers a larger area than Paris, and as the wealthy classes are concentrated in the upper quarters of the town, just as they are in the West End of London, it is there that one may see all that Batavia has to show of luxury, comfort, and elegance. The old haughty, aristocratic capital of the Netherland Indies, whose beauty once obtained for her the title of "Queen of the East," is found here in more than pristine freshness, and not alone in wealth and splendour, but even in social stiffness and pedantic etiquette, vies with the most ultra-refined centres of fashion in Europe.

The *Novara* had long been expected in Batavia, and months beforehand orders had been issued by the Governor-general to all the Dutch colonies in the East Indies, for the courteous reception of the Expedition, and energetically assisting its members. A German merchant from Celebes, whom

we happened to meet the day of our arrival, informed us that in Macassar the entire population had been for several months past looking for the arrival of the foreign man-of-war, and those on the look-out at the signal-station, as often as a large ship made its appearance on the horizon, were continually hoping that it might prove to be the long-expected visitor.

All that the resources of a mighty and generous power, such as is that of Holland in Java, could furnish to make our short stay at the island as agreeable and instructive as possible was exhibited on the most lavish scale, and all that could be done to promote our objects in view by men of science, of which Java possesses a considerable number, and even some of European celebrity, was offered with the most praiseworthy alacrity. Several eminent scholars and naturalists, headed by the renowned ichthyologist, Dr. Bleeker, who shortly before had been decorated with an Austrian order of merit for his valuable contributions to our knowledge of the natural history of the Sunda Islands, did the honours, so to speak, for the members of the scientific commission, of whom they became the constant companions.

The very day we landed we visited the Museum, in the company of our new friends, where we found an extremely interesting and most valuable collection, principally of ethnographic objects. Here we saw idols of the palmy days of Buddhism, made of bronze and silver, beautifully carved, which came from the interior of Java, as also from Sumatra and the Engano Islands; clothes of the bark of trees, gar-

ments of fish-scales, of a species of *Scarus* (probably *Scarus Schlosserii*), head-gear, armlets, and necklaces of the teeth of men and wild animals, richly adorned "creeses" or Malay daggers, lances and arrows of bamboo, whose iron heads were poisoned by a wash of arsenic mixed with lemon-juice; a great variety of musical instruments, among which were specimens of the well-known and singular *Gamelang*, which consists of a row of bells of all sizes and tones, which are struck with slender pieces of bamboo, and makes a regular orchestra of bells. There was also a very singular-looking collection of parasols, which as used by the natives are emblems of rank, and of which there are no less than thirty different kinds. Any one may carry a simple green, or blue, or black parasol; but those with gold thread or gold tassels are only permitted to be used by persons of a certain social standing, so that one may always know the social position of a Javanese by the parasol he carries, just as among the Chinese, rank is indicated by the number of peacock feathers, and the colour of the button on the bonnet. The higher the rank, the broader is the gilded fringe, so that the parasol of a Javanese prince of the highest rank is all gold together, and when fully expanded consists of three parasols, one above the other, which open by one and the same movement. Most of these parasols, prepared from the leaves of the screw-pine, are imported hither from China.

In one of the rooms is a statue of Durga, one of the goddesses of the old Hindoo mythology, moulded in metal, a pre-

sent from the Sultan of Surakarta in the centre of Java to one of the former governors of the island, who presented this fine specimen of native art to the Museum. A large number of Javanese and Sunda MSS., written on palm-leaves, have been placed by, and at the expense of, the government in the hands of Dr. Friedrich, a German philologist, to be deciphered and translated. In the same apartment we saw a large number of trachytes, with very beautiful sculptures and inscriptions, as also several figures from the island of Bali, quite modern in aspect, carved in wood and coarsely painted, representing some beautiful female figures; other hideous caricatures, which are used by the natives as decorations of their household altar, but without any religious significance being attached to them. The fact that these sculptures are no longer, as formerly, executed in stone, but are carved in wood, may be held to evidence the decay of this branch of art. A rather considerable craniological collection, comprising some 60 heads of the various types of races inhabiting the Malay Archipelago and the adjoining continent, was in the most handsome manner presented to the Expedition, and must, considering the many difficulties which stand in the way of our acquiring correct scientific knowledge of this interesting question, especially among races inhabiting uncivilized countries, be regarded as an exceedingly valuable addition to our collections of objects of natural history at home.

The Ethnographic Museum and the library attached are, however, only branches thrown out by the indefatigable

activity of the oldest scientific society in Java, the *Bataviaasch Genootschap van Kunsten en Wetenschappen*, which, founded in 1778 by the Europeans then resident in Batavia, has since that period published some thirty volumes of valuable statistics of the various objects of which it takes cognizance, and is in correspondence with upwards of 150 learned societies. Since 1852 there has also appeared under the auspices of this Society, conducted by three members of the direction, Dr. Bleeker, Mr. Netscher, and Mr. Munnich, a monthly journal of Indian History, as also of physical and ethnographic statistics (the "*Tijdschrift voor Indische Taal Land en Volkenkunde*"), of which seven volumes have already appeared, published in 8vo. Not less valuable, especially in the interests of natural science, is the Association known as the "*Natuurkundige Vereeniging*," which has been in existence since 1850, and, under the superintendence of that indefatigably active scholar Dr. Bleeker, has within that period published a considerable number of most interesting memoirs, while the Society for the advancement of Medical Science (*Vereeniging tot Bevordering der Geneeskundige Wetenschappen in Nederlandsch Indie*), under the guidance of the distinguished Dr. G. Wassink, has given to the world through its annual publications a large variety of experiences and observations on the study of Medicine.* All these scientific institutions are the more deserving of commendation, when we reflect that there are but 6000 emi-

* Several copies of these various publications of the different scientific societies of Java were presented to the Expedition by the members of these learned bodies.

grants from Holland, scattered abroad throughout the Netherland Indies, of whom only some 3000 are in Batavia, and that the white population is for the most part constantly changing. It is obvious this latter condition must have this prejudicial effect, that the various branches of scientific inquiry cannot always enjoy a uniform degree of attention, and that the task of maintaining them in a proper degree of efficiency must depend almost exclusively upon the continuance in office and constant attention of individuals. Owing to this frequency of change the active prosecution of scientific inquiry has undergone marked fluctuations in Batavia, and while occasionally it was at the lowest ebb, so to speak, at another time, as happily was the case at the period of our visit, it presents, in the convergence of numerous powerful minds devoted to the pursuit of knowledge, the imposing spectacle of a strong set of public opinion towards intellectual enjoyment and cultivation.

Accompanied by Dr. Bleeker the members of the Expedition visited several of the most interesting of the public institutions, the establishment of which reflects the greatest honour on the government, as well as the public-spirited individuals who projected them. The Military and Civil Hospital at Tjiliwoeng, or Great River, does not indeed present the palace-like appearance of the Misericordia Hospital at Rio, but the small neat buildings, one storey high, scattered among beautiful flower-gardens, and occupying a flat space of great extent, are kept scrupulously clean, and are

arranged with great comfort. Six physicians are on duty here, and the most exemplary care and attention are bestowed on patients. Officers and public servants who fall sick have, in particular, large, light, airy, elegantly furnished apartments; other patients are received into lofty, well-ventilated, spacious halls, usually holding from 50 to 60 beds. Altogether the hospital can accommodate 600 patients. The most common diseases are dysentery, intermittent fever, and heart and liver complaints. Here we saw numerous cases of *Beri-Beri* (the Barbiers of English medical writers), that singular, usually incurable disease which begins with intermittent fever, and generally ends with paralysis of the spinal chord. In the year 1857, of 500 patients at Batavia no fewer than 348 were attacked with this frightful complaint, of whom 249 died within a brief space. In the medical section of the *Novara* publications will be found a complete account of this most interesting malady, which fortunately is very limited in its ravages, and hitherto has been almost exclusively confined to the natives.

In one of the wards we were shown a Dutch sailor labouring under an asthmatic attack, whose hands and feet had been shockingly mutilated in 1846 by pirates in the Straits of Malacca. We also found among the patients several German sailors and soldiers, whose transports of joy were unmistakeable on hearing once more the sound of their native language, and at the opportunity of conversing with a fellow-countryman.

The heavy expense of building in Batavia, and the anxious vigilance exercised over those of the community who are sick, will best be understood from the fact that one single new ward, making up from 60 to 80 beds, cost the government about 60,000 guilders (£5000). One of the buildings, at a little distance from the rest, is set apart for female invalids, as also for lunatics and sick prisoners. Attached to this hospital is a school of midwifery for the instruction of native women in obstetrics, which at the period of our visit was attended by sixteen women from various islands in the Malay Archipelago, and which, in a land where the birth of a child is accompanied by so many superstitious and hideous ceremonies, cannot fail to be followed by most beneficial results.

One very important and useful establishment is the Javanese medical school (*Geneeskundige School voor Inlanders*), which, founded in 1851 by Mr. Bosch, at that period chief of the medical staff, is intended to supply the sons of the more prominent natives of Java and the adjacent islands with a thorough training in and acquaintance with the art of medicine as practised in Europe. Government defrays the travelling expenses of these youths, as also all expenses of maintenance and education. Among the four-and-twenty scholars here, we saw sons of native princes of Java, Palembang, Celebes, Amboina, Ceram, Sumatra, and Borneo, who intended following up the profession; and it is worthy of remark that two natives of Menado in the island of Celebes of the

savage cannibal race of the Alfuras, were pointed out to us as among the most apt and docile of the scholars! Those of the students who are Christians, are clothed in the dress of Europeans, the rest, chiefly Mahometans, wear Oriental attire. Instruction is imparted in Malay, since as a rule not one of the students on entering the college understands a word of Dutch. For the same reason the books usually employed in instruction cannot be made use of, while, owing to the poverty of the Malay language, any translation into it must be fraught with difficulty. All technical names are therefore converted into Latin. The course of instruction is carried on the first year in the class-room, the second by the bed-side of the patient, or the dead body. After strict and thorough examination each pupil receives a diploma as a "Doctor—Java," besides a monthly salary of from £2 2*s.* to £2 10*s.*, and an outfit of the most important drugs and surgical instruments. By this system some fifty young men have already returned to their homes as physicians and government officials, and thus greatly contribute to the extension of European civilization.

In the chief streets of Batavia the stranger comes upon some small open watch-houses, or rather huts, consisting simply of four poles and a roof of palm thatch, in which is suspended a long, slender piece of wood (*Tong-tong*), which is used for three different objects. The Javanese who in this little hut is watching over the property and personal safety of the inhabitants, strikes the *Tong-tong* with a sort of drum-stick, in

order to announce the hours of the night, or to give notice of the outbreak of a fire, or in case of any one *running a-muck*. This singular phenomenon, in which a Malay with open knife or drawn dagger rushes madly through the streets, and seeks to kill every one he encounters, occurs perhaps a dozen times a year. The first murder is very probably intentional, the offspring of hate or revenge, but that once accomplished, the murderer, usually under the influence of opium, runs recklessly forward through the streets, with the wild cry of "Amok"—"Amok" (Kill!—Kill!), knocking down and stabbing whoever he encounters. As one can only approach the miscreant at the peril of one's life, there is kept in these watch-houses a peculiarly constructed weapon of long wooden staves, and shaped at the upper end not unlike a hay-fork, with which the desperate wretch can be seized. The various methods in which the Tong-tong is struck at once conveys notice as to which one of the three announcements conveyed by the instrument it is the watchman's object to make.

The natives, although they divide themselves into the Java and Sunda nations, belong nevertheless to the same race, viz. the Malay, and are readily recognizable by their short thickset form, round face, wide mouth, short narrow nose, small black eyes, by their brown complexion, verging on yellow, and their luxuriant but always rough and coarse hair. As to their moral characteristics, the Javanese are a mild, easily contented, temperate, simple, industrious people. The principal occupation of the 10,000,000 inhabitants of

Java and Madura, is agriculture, which with them is at least equally, if not in a much higher degree, understood by them than by any other Asiatic community, with the exception of the Chinese. This is apparent from the neatness and careful cultivation of their fields, the excellent condition of their farm-stock, the careful observance of seed-time and harvest, and above all by their regular irrigation of the soil. When Java first became known to Europeans, the chief produce of the island consisted of rice, leguminous vegetables, indigo, and cotton. Intercourse with Europe has superadded to these two American products, maize and tobacco, and one African, coffee.* The Javanese have even less time for the mechanical arts than for agricultural pursuits, yet in the construction of boats and dwelling-houses, as also in making agricultural implements, shields and weapons of war, they have more aptitude than the majority of the people of the Malay Archipelago.† The only other stuff, except cotton, of which they make clothing is silk, chiefly the raw, coarse, Chinese silk; all endeavours to naturalize the silk production in these islands having failed hitherto.

* Still the chief article of cultivation is rice, which constitutes almost the sole bread-stuff of the Javanese. Crauford in his admirably digested dictionary of the Indian Archipelago calculates that the annual rice crop is about 500,000,000 lbs., and that each individual consumes annually one quarter, or 480 lbs.!

† For some extremely beautiful and costly weapons used by the Malay races we are especially indebted to Mr. J. Netscher, one of the directors of the Society of Arts and Sciences, a profound scholar in the various idioms spoken in Java, and who on the same occasion enriched our collections with some of his own valuable numismatic specimens and philological researches, and to this day neglects no opportunity of advancing the special objects of our Expedition.

In addition to the ordinary language used for communication and every-day purposes there are in Java two special idioms,—Javanese in the centre and east of the island, and Sunda in the west of the island. The small river Losari in the province of Cheribon on the north side of the island indicates the boundary-line of the two languages. Owing to the circumstance that both the idioms are used in Cheribon, many writers have deduced thence the origin of the name of that province, which signifies in Javanese "mingled," or mixed. The Javanese tongue, which of the two is far the more highly cultivated, has been a written language for untold ages, and its alphabet is universally used among the Sunda groups as well as in the adjoining Malay groups. Various inscriptions in stone and brass carry us back in the history of Java to the 12th century, and it would almost seem that the Javanese at that period had already attained the same degree of civilization as when four centuries later the Europeans for the first time landed on their soil.

Of the original Javanese language there are three dialects,—the language of the populace (Ngoko), or low Javanese, the ceremonial language (Kromo), known as high Javanese, and the old mystical dialect, or *Kawi*.

Javanese has borrowed a number of words from Sanscrit, Arabic, and Telingu, especially since the introduction of religion and commerce.

One of the most important events in the history of the Javanese was their conversion to Brahmaism, and still

later to Mahometanism. The precise period at which the first of these took place seems to be as yet quite uncertain, but this much is known, that from the 13th to the 15th century Brahmaism prevailed in Java. The conversion of the Javanese to Islam, whose religion is at present professed by the great majority of the inhabitants,* took place in 1478 under the ruler of Salivana, after Arabian, Persian, Malay, and Mahometan Hindoos had since the year 1358 vainly endeavoured to introduce that faith.†

In addition to the native population there is also a large number of foreign settlers in Java, of whom the Chinese constitute far the largest contingent. Their number is above 140,000, and would be much greater were their attempts at colonization not kept down by numerous limitations, and heavy taxes and imposts. The Chinese, who in more than one respect may be regarded as the Jews of India, are only admitted by the Indian Government at certain points of the coast, and in many of the Regencies must not transgress those limits. Although they are extraordinarily industrious, ingenious, and well-suited for hard labour, yet the govern-

* Only two of the various races of Java have remained constant to the belief of their fathers, and still honour, some of them Buddha, some Brahma. Among these are the Badawis, who constitute all that remain of a once mighty race at the east end of the island, among the hills of Kendang in the Residency of Bandang, on the Tenggers, also at the east of the island in the Residency of Passeruwan, the former numbering 1500, the latter about 4000 souls.

† Garsick, the Grisse of modern days, was the first spot where these jealous sectaries settled about the year 1374, and the two Arabic sheikhs Dulla and Moellana are usually cited by later historians as the introducers of the Mahometan worship into Java.

ment is of opinion that their unchecked intercourse with the natives would inevitably prove prejudicial to the latter, who are plundered by the Chinese in every possible manner. Their main, indeed sole, object is to make money, and at all public auctions it is they who chiefly buy at a small price, and directly afterwards succeed in getting off their purchases at an enormous advance. One can purchase of these Chinese dealers at prices almost unheard of for cheapness, but quality and lasting capabilities are not guaranteed. A German writer compares the Kampong or Chinese quarter to a Polish country town on a fair day. Every house and store is crammed with all manner of useless trash, and everywhere there is the utmost bustle. The most various articles are exposed for sale in each magazine. Here too are found the Chinese theatrical booths, in which at various hours throughout the day Chinese comedians, richly dressed in Chinese fashion, perform Chinese plays, which are applauded by a numerous ragged auditory, collected in the open space in front!

Each Chinese colony, or *Kampong*, has a chief, appointed by government, with the title of lieutenant, captain, or major, available within the limits of the Kampong, but which, it is needless to say, confers no military privileges. Those of the Chinese residing in Java belong to mutual societies, whose members assist each other, and which have not merely humanitarian, but also political tendencies.

We are in possession of the affiliation-ticket of a member

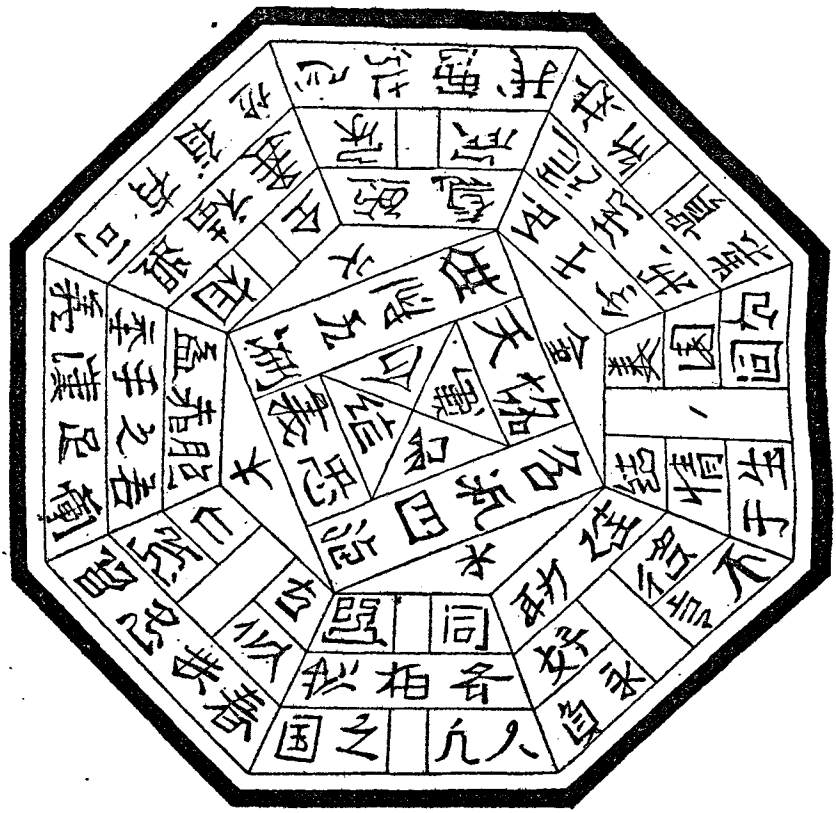
of the native Chinese society of Hoei, or Tuité-Huy (Brotherhood of the Heavens and the Earth), printed on a fabric of reddish cotton, which bears 91 various written characters, for the following translation of which, as also for the accompanying particulars respecting the objects of this very remarkable society, we are indebted to the kindness of the renowned Chinese scholar, Professor J. Neumann of Munich :—

"The Brotherhood of the Heavens and the Earth frankly declares that it considers itself called on by the Supreme Being to put an end to the frightful contrast between wealth and poverty. In its view the possessors of earthly power and wealth have come into this world under the same ceremonies, and leave it in the same manner, as their defrauded brothers, the poor and oppressed. The Supreme Being never willed that millions should be held in slavery by a few thousands. Father Heaven and Mother Earth have never conferred on the few thousands the right to swallow up the property of millions of their brethren for the mere satiating their own luxury. To the rich and powerful their fortunes were never bestowed by the Supreme Being as an exceptional right; it consists rather in the labour and the 'sweat of the brow' of the millions of their oppressed brethren. The sun with his beaming face, the earth with her treasures of wealth, the universe with all its joys, are boons common to all, and must be seized from the grasp of the few thousands for the satisfaction of the necessities of the naked millions. The world must ultimately be purged of all oppression and woe;

this must be initiated in brotherly unity, must be steadily followed up with mind and hand, and must be completed. The good seed of this brotherhood must not be stifled beneath noxious weeds, rather is it our duty to root up these noxious weeds, that overshadow all things, to the benefit and advancement of the good seed. The problem, be it frankly confessed, is a mighty and a difficult one, but let each man bethink him, that there is no victory, no redemption without storm and strife. Until the great majority of the dwellers of all the cities of each province have taken the oath of fidelity, each man may continue outwardly to obey the mandarins, and ingratiate himself with the police by presents. Ill-timed demonstrations will injure the plan. So soon as the majority of the inhabitants in each city and province has acceded to the bond of our union, the old monarchy must fall to the ground, and we shall be able to found the new reign upon the ruins of the old. Millions of grateful brethren shall honour the founders of our brotherhood after they shall have gone to the grave, mindful of the mighty benefit they have conferred;—the redemption from chains and bondage of a ruined social system."

The seal of union of this Brotherhood of the Heavens and the Earth is engraved with numerous hieroglyphics, and many-cornered in its inner circumference, emblematic of the supreme states of felicity, according to Chinese notions, viz. wisdom, justice, posterity, honour, and riches. These five states of felicity correspond to their five elements, earth,

wood, water, metal, fire, whose symbols figure at the corner of the seal. Immediately below are seen certain other en-



graved emblems, indicating mighty undaunted leaders, ancient heroes of China, who are standing closely together with unshaken front. Then follow a number of proverbs, partly of symbolic significance, and in rhythmical sayings, such as:—

In close array the ranks of heroes stand,
Obedient to the master-mind's command.

One tie unites the old and the young brethren; in order of battle old and young are intermingled. Each man stands ready to obey the smallest signal of his immediate commander. As the swollen mountain torrent spreads itself over the level ground, innumerable bands of these pour forth on all sides:

Mingle brown, and white, and red,
And strike till ev'ry foe lie dead.

The by-laws of this secret society are so strict that there is hardly an example on record of a member incurring a denunciation, or being guilty of treason. In consequence of the cloud of mystery which envelopes these societies, they are the more dangerous, because unassailable by the government. And accordingly, all precautions hitherto taken for suppressing these secret societies of the Chinese population have proved unavailing. Secret societies however are anything but forbidden under Dutch rule in Java,—on the contrary, it is rather *bon ton* to belong to some one of the lodges of free-masonry existent out there.

Before setting out on our excursion into the interior of Java, we had an opportunity of being present at the festivities which it is customary to get up on the occasion of the reception of an embassy from one of the native princes. On the present occasion it was the ministers of the Kings of the

Island of Lombok,* eastward of Java, who had to deliver on behalf of their illustrious masters letters for H. E. the Governor-general of the Dutch East Indies. During the whole of their stay they were maintained at the expense of government in the house of a specially appointed master of the ceremonies, a native of the Island of Borneo, and nephew of the Sultan of Pontianab, whose official position imposes upon him the duty of showing all that is worth seeing in the city to these occasional illustrious Malay guests. Both ministers were accompanied everywhere by a Malay dolmetsch, although they spoke Javanese with the utmost fluency, in addition to their mother tongue.

On the day of the reception they made their appearance in ceremonial dress, and in gala "turn-outs," at the government palace, where they were presented to the Governor-general by the Resident of Batavia, the highest authority in the city. The master of the ceremonies took charge of the letters of the Kings of Lombok, as also of two immense spears, at least twelve feet long, each richly gilt and gaily bedecked with yellow tissue,† which were presented by the ambassadors as presents from the Kings of Lombok to the Governor-general.

* There are at present two kings reigning on the Island of Lombok: Ratù Agong Agong Suedé Carang-assem, and Ratù Agong Agong Madé Carang-assem. These had submitted under special treaties to the Dutch Government, whose vassals they now are.

† Yellow is the royal colour of the Ruler of Lombok. According to the prevalent custom, no one but the king and members of his family is permitted to use that colour in their dress or ornaments.

It is however strictly forbidden to the Dutch employés to accept any presents of the most trifling nature, and even in cases such as the present, where the refusal of the gifts would be an insult to the donor, all such must be sold for the benefit of the treasury, or at least a corresponding amount must be returned by the receiver out of the state treasury. Accordingly, it is the custom to recompense all presents made by the various regents with others of far greater value.*

At the entrance to the palace a guard of honour of European soldiers was drawn up in full uniform, between whose ranks the ambassadors were ushered into the hall of reception. One of the attendants now held a large rich-looking, highly-gilt parasol above the letter of the Kings of Lombok, which was borne along by the master of the ceremonies on a silver waiter. A similar mark of distinction was conferred on the two ambassadors and the resident. The Governor-general in full official uniform, and surrounded by a number of government officials, received the embassy on a platform, where he sat on a beautifully covered gilt chair,

* This peculiarity of Eastern manners is universally prevalent wherever Oriental nations have come in contact with Europeans. It is of course as entirely unlike the genuine hospitality of the rude Bedouin or Tartar as it is possible to imagine, and seems to belong to an early and very imperfect notion of true refinement. Traces of it will be found in all countries, even in Europe, and in its original form of making a present in the expectation of receiving something more valuable in return, which lies at the bottom of all this pseudo-generosity. The astuteness of the Scotch Highlanders, themselves a race remarkably free from such meannesses, has hitched the system into a pithy proverb, the sense of which is to "send a hen's egg in order to get a goose's in exchange."

canopied with costly tapestry. The elder of the two ambassadors, having been introduced by the resident, thereupon proceeded to say that he was charged to present the homage of his master to the Dutch Government, and to remit a letter. On a formal sign by the Governor-general, the government interpreter, Mr. Nitscher, took the letter off the silver waiter, at which moment a salute of nine cannon-shot was fired in the garden behind the palace, to announce to the people outdoors the moment at which the king's letter had been received. The letter, enveloped in yellow silk, and written in Malay with Arabic characters, was thereupon opened by the government interpreter, and read with a loud voice, after which it was translated into Dutch. In a similar manner the reply of the Governor-general was translated for the two ambassadors into the Malay language.

At last, after these stiff and wearisome formalities had been gone through, the ambassadors were invited to occupy chairs that had been specially prepared for them next the Governor-general, when a short exchange took place of civilities and common-place phrases, until the Governor-general gave the signal for breaking up, by rising from his seat. The ambassadors were thereupon ushered forth in the same ceremonious manner in which they had entered.

The occasion of the present embassy was a dispute with the Sultan of Sumbawa, in which the Kings of Lombok invoked the mediation of the Dutch Government. The Sultan of Sumbawa had in fact refused to restore two subjects of

the Kings of Lombok who had fled to Sumbawa. But for the preponderating influence of the Dutch Government the two disputants would long before have resorted to war.

On the 13th May we set forth in two large and very comfortable coaches for Buitenzorg (signifying in Dutch "on the farther side of sorrow"), the usual residence of the Governor-general, who only comes to Batavia on certain days in the month to give audiences. He had not alone invited the members of the Expedition to visit the Preanger Regencies as guests of the government, and caused arrangements to be made for their ascending with as little trouble as possible the volcanic peak of Gunung Pangérango (10,194 feet), but likewise detached one of his adjutants, M. de Kock, and Dr. Bleeker, both well acquainted with the natural history of the country, to accompany us upon this excursion. Messengers were sent in advance, to announce our approach at each station, so as to secure us a comfortable and courteous reception wherever we wished to pass a few hours, or to take a night's rest.

Buitenzorg is distant from the capital 39 paals or Javanese miles,* which distance, thanks to the excellence of the roads and the horses in Java, is traversed in about three hours, two "loopers," or runners, as is the custom here, as else-

* 73.75 paals (posts) are equal to one degree of the equator, whence one paal=within a small fraction of 4943 feet 6 inches. This method of indicating land-measure originated in the circumstance that on every road intersecting Java from west to east, the respective distances from the three chief places, Batavia, Samarang, and Surabaya, are marked up upon wooden "paale" or posts.

where in the East, accompanying each coach, who are incessantly on and off the waggon, yelling and cracking their long whips at the horses to keep them to their speed. About every five paals, or $4\frac{3}{4}$ miles (English), the cattle and the runners are changed, so that an unvarying speed is attained. All along the roads stretches the telegraphic wire, which unites Batavia in one direction with Angier (75 miles) and Surabaya (543 miles).* The wood of which each post is constructed is the *Kapok* tree, a species of *Gossypium*, or cotton tree, and here for the first time we saw the slender, tightly-strained wires suspended on the stem of a luxuriant green tree. Thus, if the experiment succeeds, the elsewhere naked, dead telegraph-poles will here be made at once useful and productive, as each post that supports the wire will produce a small quantity of cotton.

Buitenzorg possesses one of the finest and most extensive botanical gardens in the world. It was laid out as far back as 1817, during the vice-royalty of Baron van Capellen. The distribution of the various orders is contrived equally to assist and promote the instruction of the general observer, and to accustom the naturalist to the phenomena of Eastern vegetation. Each order of plants has its own area. The various species of palms are the most extensively represented, and there is scarcely one of the

* As yet there are no railroads on the island. But a company has been formed with the intention of uniting the more important and productive districts of the island, an enterprise which will extend to about 1000 miles (English), and will cost about £8,500,000.

genus, whether ornamental or useful, found in the Netherland Indies or Australia, of which a representative is not to be found here. The superintendence of this garden has been intrusted to that indefatigable *hortulanus*, Mr. J. C. Teijsmann, who in his department assisted to the utmost the objects of the *Novara* Expedition. He not only presented us with duplicates of all the more valuable plants in his very extensive collection, but also with valuable seeds. By such kind co-operation we found ourselves provided with some twenty various species of fibrous plants, amongst others the well-known Ramé-shrub (*Boehmeria utilis*), and that useful species of wild plantain, the *Musa textilis* (from the leaves of which is manufactured Manilla hemp), as also twenty-four different species of rice. Of these latter two were of special interest, one needing no watering, but flourishing best in mountainous, dry soil, the other being chiefly used by the natives for the preparation of a dye.

Mr. Teijsmann has the great merit of having been the first to introduce into Java the cultivation of the valuable and costly Vanilla plant (*Vanilla planifolia*), by using artificial means of fructification, after all the many expensive experiments previously made had failed, because the insect which effects the fructification of the plant in its orginal climate, the West Indies, is not found in Java. At present the yield is so great, that not alone does Mr. Teijsmann annually secure and send to market several hundredweights of this aromatic pod, but several other landowners have applied them-

selves to the laying out of Vanilla plantations. The fruit, from six to ten inches in length, by three to five lines in width, of a dark brown colour, flexible, and somewhat unctuous to the touch, requires about five months to ripen. They are carefully dried, first in the shade and afterwards in the sun, and are then packed away in bundles in air-tight metal cases. One hundred pounds of fresh pods yield about one pound of the Vanilla of commerce. Formerly the value of a pound of Vanilla was as high as £6 sterling, but it is at present sold at about £4.

In the beautifully situated Hotel Belleuve, where we lived while at Buitenzorg, we chanced to become acquainted with a curious individual, a young negro named Aquasie Boachi, son of an African prince of Coomassie, the chief city of the kingdom of Ashantee on the Gold Coast,* who, while a child of nine years, had been sent by the colonial government to Europe, in order to be educated in Germany. It was the intention to make apparent what early education and instruction can do for the negro, and how the present low state of the black race is principally attributable to their oppression hitherto, and to the limited application, in their case, of European civilization. The experiment proved most satisfactory. Aquasie Boachi speaks German, English, Dutch, and French quite fluently, and holds a diploma, as mining engineer, from the

* It is well known that Holland in former days recruited her black regiments of the Netherland Indies by men from the Gold Coast, and in fact had set on foot a sort of traffic in men with the king of Ashantee.

mining academy of Freiberg in Saxony. He is a pupil of the celebrated Professor Bernhard Cotta, whom he still remembers with affection and gratitude. As Aquasie had become a Christian he could not, save at the risk of his life, return to his heathenish native land, to the bosom of his own family. The Dutch Government accordingly, regarding him in the light of a victim to philanthropical experiments, at present pays the young miner out of the state funds about £400 per ann., and occasionally employs him on mining researches. Aquasie had resolved to settle for life in Germany, where, as he told us, he felt himself thoroughly at home, but the climate did not agree with him, upon which he returned to Java, and had since occupied himself in coffee-culture.

From the terrace of the hotel one enjoys a magnificent prospect bounded by the mountains around. On the right rises a lofty peak, whose summit-cone has been cloven into three pinnacles, the Gunung Salak 7204 feet (English), an extinct volcano, from which, however, in 1699 issued immense volumes of sand and mud, accompanied by columns of flames, tremendous bellowings, and convulsions of the soil. The torrent of liquid mud hurried along trunks of trees, carcasses of animals, tame as well as wild, crocodiles and fish, and, still preserving its character of a mud torrent, rushed into the sea near Batavia, stopping up the mouths of several rivers and brooks. Since then this colossal hill, torn to its innermost core by this fearful eruption, has remained silent, and peaceful fields, alternating with luxuriant forest,

stretch upwards to the very flanks of its once dreaded summit. To the left of Gunung Salak, and in appearance and elevation far more imposing, stands out the Gedee Range. Its highest point is the tapering regular cone of Gunung Pangerango, still further to the left of which rises, almost equal in height, the bare rocky wall of the still active crater of Gunung Gedeh, from the abyss of which there occasionally issued light clouds of vapour. But this exquisite landscape unveils itself to the ravished view of the beholder only during the early hours of morning. By 10 A.M. thin vapours have gathered round those lofty summits, which gradually accumulate as noon approaches, until by 3 P.M. there is almost invariably a dense mass of clouds resting over the entire range, which very frequently dissolve with fearful violence in the shape of tremendous tropical thunder-storms. The annual rain-fall at Buitenzorg would seem to be higher than at any other spot on the face of the earth. During some years it occasionally attains the depth of 200 inches (English), which is far beyond the utmost known in Central or Southern America.*

* Dr. Junghuhn, in his admirable work upon Java, describes the rainy season—which usually has fairly set in by the month of January, when the westerly and north-westerly winds are driving the rain-clouds before them—in the following spirited language:—"The floods stream from the clouds often for four-and-twenty hours at a stretch without the slightest interruption, and with such violence that the noise of the plash of the falling element drowns the voices of the inhabitants, compelled as they are to keep to their houses. Every brook and river overflows its banks, covering with a tide of muddy brown water the alluvial soil wrested from the bed of ocean, while the frogs croak incessantly day and night, and the lizards and snakes emerge from their holes, and creep into every corner of the dwell-

The evening we spent at the residence of M. Van de Groote, inspector of the tin-mines of Banka and Borneo, who was of very great use to the geologist of the Expedition, and at whose hospitable house we met a number of personages of distinction.

On the following morning (14th May), before prosecuting our journey, we made an excursion to the neighbouring Batoetoelis (pronounced Batootoolis), as a number of trachytic rocks are called, to which young Javanese wives, who wish to become mothers, ascribe the most marvellous virtues. The inscriptions hewn on the stones have been deciphered by the German philologist, Dr. Friedrich. There is also shown a stone with a depression like a human foot, which tradition asserts to be the footstep of a native prophet, who is supposed to have stood thereon at a time when the mass was not yet solid and hardened. There evidently is some association of ideas similar to that of the Cingalese respecting Adam's Peak, but without the poetic colouring of the latter.

From Buitenzorg we went to Tjipannas,* a country-seat of the Governor-general, at the foot of Pangerango. The road from Buitenzorg to Tjipannas is part of the great post-road from Batavia to Surabaya, which just at this point

ings of every man; all through the hours of darkness is heard the loud thousand-voiced hum of insects, of myriads of mosquitoes, till it is hardly possible to find a dry place throughout the house. The hot, sultry air is saturated with moisture, so that everything becomes damp, in consequence of the fine particles of the rain-vapour penetrating into the inmost corners of the house."

* Pronounced *Chipannas* (hot stream), from *Tji*, water, and *Pannas*, hot. *Tji* is always pronounced like *chi*, and *oe* like *oo*.

traverses the mountain pass of Mengamendoeng, 4925 feet high, an outlier of the Gedeh range. It passes at first through richly-cultivated properties, with splendid rice-crops, and a little further on through coffee-plantations, after which comes uninhabited wilderness, when the road becomes so steep that a pair of buffalos are harnessed in front of the horses of each carriage. *En route* we visited at Pondok-Gedeh the beautiful property of the family of Van den Bosch, whose founder greatly distinguished himself in promoting the agricultural prosperity of the island, while Governor-general of the colony, 1830—33. In the extensive gardens here we saw several large species of *Vanilla* and *Cactus* (*Nopal*), the latter of which are devoted to the propagation and gathering of the diminutive cochineal insect, from which is procured such a valuable dye. In 1826, a pair of this very fecund insect were brought from Spain to Java, and at present * there are in Pondok-Gedeh alone 500,000 plants, from which between 10,000 and 20,000 pounds of cochineal are obtained annually, while other gardens of Nopal of equal size occur elsewhere throughout the island. We were also filled with astonishment at the variety and richness of the brushwood and forest trees, which the European is accustomed to see only as diminutive, tender specimens, the rare plants of a hot-house! Under the influence of a tropical climate, and a fruitful soil, the tea-plant, the nutmeg, the cinnamon, the sugar-cane, the

* One can form some idea of the enormous fecundity of this insect, if we mention that it takes 200,000 in a dried state to make one pound of the cochineal of commerce.

coffee-bean, and the indigo, all flourish in wildest profusion, and the various warehouses are as crammed with the splendid produce of these valuable colonial staples as our northern granaries are with the necessaries of subsistence in the shape of dried fruits.*

Quite close to Pondok-Gedeh, amid the majestic mountain scenery of Gadok, is the *maison de Santé* of Dr. Steenstra Toussaint, which enjoys a well-earned reputation under the management of Dr. Bernstein, a German physician and naturalist. Invalid residents of the coast, when recovering from climatic diseases, make a point of hurrying to this institution, in order to benefit by the keen, bracing mountain air. Dr. Bernstein is, as far as his professional engagements will admit, at once a zealous collector, and a skilful preparer, who has already made some very beautiful collections, and who, if he stay here any length of time, will be in a position to enrich considerably the museums of natural history in Europe, with numerous rare and valuable specimens.

Just at the summit of the pass of Megamendoeng (dark cloud), begin the Preanger Regencies. This pass moreover forms a boundary line between the Malay language, chiefly used for commercial transactions along the coast, and that of Sunda, the difference between which two idioms, as regards the uninformed stranger is only so far important, that in

* Two Vanilla plants, imported in 1841 from the Botanical Garden of Leyden, remained barren for nine years, till recourse was at last had to the system of artificial fructification, upon which these plants increased so rapidly that the plants at present under cultivation at Pondok-Gedeh amount to 700,000!

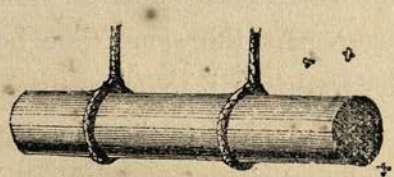
asking a native for a light for his cigar, he must now say "Sono," instead of "Api," as hitherto, always supposing that he is a smoker, a qualification which rarely fails to appertain to the inhabitants of the Dutch East Indies.

Here, in a wooden building open on all sides, and commanding an exquisite panoramic view, we partook of a *déjeuner à la fourchette*, prepared quite in the European style, after which, amidst a drenching thunder-plump, we pursued our course to Tjipannas, which lies about 1000 feet below the level of the pass.

At every village we passed, the authorities, as is the custom of the country, provided us with an escort. Thus we almost constantly had some 20 or 30 persons riding behind our carriages. The poor people had indued themselves in their best apparel, and looked very pretty in their varied fantastic attire. Even the rain, which still continued to descend in torrents, did not prevent them from following us, in order to do justice to the requirements of Javanese etiquette. So too, every one whom we met on the road assumed a respectful attitude, resting on the knees in a half-kneeling position, and cowering down in the road with folded hands, till our vehicle had rolled by. All the villages we saw had a very neat, clean, cheerful appearance. The houses of the Javanese (with the exception of those of the native authorities) are as a rule built entirely of bamboo, part being of wicker-work, part of the cane placed either side by side, or above each other, the whole roofed in with palm-leaves, or

Allang-grass (*Imperata Allang*), or narrow shingles of cut bamboo, and with a flooring raised two or three feet above the level of the soil. The beautiful yellow wicker-work is usually stained in alternate squares of so black a colour that the walls of a Javanese hut resemble nothing so much as a gigantic draught-board. Under the eaves of the dwelling, which project five or six feet, and is supported in front upon poles, so that there is a sort of verandah beneath, are suspended cages with various feathered inhabitants, which the Javanese cherish with much tenderness, or else a very peculiarly constructed bee-hive, consisting of a bamboo-cane, six or nine inches thick by three or four feet in length, which is split through the centre, hollowed out, and fastened together again on the upper side.

Through a small orifice left in front, this artificial cavity is within a week or two peopled with a swarm of tiny stingless bees (*Meliporia minuta*), which in the wild state inhabit the holes and cavities of the calcareous cliffs, and provide the Javanese with honey and wax. The latter product is blackish, slimy, and adhesive, and is employed in the delineation of the beautifully coloured figures in the gowns (*Sarongs*) of the native women.



Javanese Bee-hive.

At the station of Tjianjawar, we were saluted, while changing horses, by a Javanese chief, from Tjiangoer, named Radben Rangga Padma Negara, who, despite the tremendous tropical rains, accompanied us on horseback in his rich uniform, overlaid with gold lace, as far as Tjipannas, where we were received by two government officials, and welcomed with the utmost cordiality. Here it was arranged we were to pass the night, so as, early the following morning, to make the ascent of Gunung Pangerango. We also found awaiting us a letter from Dr. Junghuhn, the renowned geologist and writer on the natural history of Java, who for years has resided about a day's journey from Tjipannas, at Lembang, at the foot of Tankuban-Prahu, and has latterly been engaged by government to superintend the china-plant cultivation. Dr. Junghuhn had come to meet us as far as Tjipodas, where the first attempts at cultivation of the china-plant were being made with roots imported from South America, but, owing to a press of important business, was compelled to return to his own station before we reached the Preanger Regencies. This estimable German gentleman urgently besought us, by letter, to visit him in his forest abode, and painted in the most glowing colours the wonders of Nature, and the interest in a scientific point of view of his mighty mountain neighbour. At the same time he sent over his learned assistant, Dr. de Vrij, to welcome in his name the Austrian travellers, to explain to them in all their detail the Cinchona-plantations at the foot of Pangerango, and to

enlighten them as to the present condition and prospects of this very important branch of cultivation.

On the morning of 15th May we set off on horse-back for the Pangerango, which was covered with dense vapours, which wholly concealed it from view, and rather damped our hopes of enjoying a fine view from the summit. A path for horses has been made to the very top, and although at certain points this passes over exceedingly steep ground, yet the Javanese horses climb with such safety and dogged perseverance, even in the most dangerous spots, that one may leave these small but powerful animals to choose their way, with as much confidence as in the case of that most sure-footed of animals, the mule of South America. Our cavalcade consisted of thirty riders, while an immense number of natives took on themselves the duties of an honorary body-guard. The forests, usually so lonely, were now alive with hundreds of men, busy transporting our horses, provisions, couches, tables, and stores, which were all to be conveyed to the highest peak of the mountain, where we intended to spend the evening. After we had attained a considerable distance from Tjipannas, constantly ascending till we were about 4000 feet above it, we found the flanks of the mountain quite free of wood. The traveller sees a few villages scattered at random, and rides over grass pasturages, on which are feeding troops of buffalos, alternating with plantations of tobacco or coffee. But at the very point where the forest gradually begins, where gigantic trees have been left standing like so many

sentinels, there it is that the amazed European falls in with most luxuriant beds of artichokes and strawberries, and is welcomed on this distant soil by all the well-known fruits of his remote home. The path leads past Tjipodas, into a deep narrow valley, over-grown with the most luxuriant vegetation, and thence through a forest of indescribable majesty, filled with the straight, tapering, pillar-shaped trunks, 80 to 100 feet in height, of the imposing Rasamala (*Liquidambar-Altingiana*), and a thoroughly tropical underwood of wild *Musaceæ*, and splendid tree-ferns, till finally the broad plateau-shaped Tjiburum (red-water) is reached. Here at an elevation of 5100 feet we found some Pasanggrahans, or resting-houses, erected by government for the shelter and accommodation of all travellers through these mountain solitudes, who may happen to be surprised by night, or inclement weather. Such hostelries are found everywhere in the interior of Java, especially in those districts where they are most likely to be needed by European travellers, or by government employés, during their frequent tours of inspection, in which they occasionally undergo severe privations. At Tjiburum, lying far above the regions inhabited by man, there is a small nursery of useful plants of colder climes, bearing ample testimony to the indefatigable activity of Mr. Teijsmann of Buitenzorg, to whom the community is moreover chiefly indebted for the laying out of the entire road to the summit of the mountain. As there was every indication of a severe storm coming on, and as we hoped by pressing for-

ward to get to our goal before it should burst, we halted here only long enough to change horses. This done we again resumed the ascent, much refreshed by the delay, which imparted renewed vigour to climb the steep zig-zag pathway, which now led through a gloomy, silent forest, whence not a sound issued except the *blowing* of our cattle, as they breasted the steep, and far below us the hollow roar of the mountain brook, which swept through the valley beneath. We then found ourselves approaching nearer and nearer to some resounding torrent, which went on increasing, till to our amazement we suddenly perceived amid the keen cool mountain breezes a smoking cascade of hot-water!! (*Tÿ-oloḳ*, or Sulphur spring). This warm spring, with a temperature of 113° Fahr., which even at its source forms a tolerable-sized brook, issues with much spluttering from a trachytic rock close by the way-side, and rushes, brawling and foaming, down a narrow defile, overgrown with splendid tree-ferns, and which is crossed by means of a slight rustic bridge. Scarcely is it possible to conceive a richer landscape, recalling as it were the primeval days of earth in all the luxuriance of Nature in the flush of youth, than this forest of tree-ferns, enveloped in clouds of warm vapour, which rise from this volcanic spring, close alongside of a clear, cold mountain torrent, which just here leaps into the same chasm! This hot spring thus early indicates the presence of volcanic fires, which is further evidenced by a tract of volcanic débris, over which it is necessary to clamber, and which has been

ejected by the destructive energies of the neighbouring active crater of Gedeh, from which the subterranean forces usually throw up, not red-hot lava-streams, but from time to time tremendous stone and mud currents, which, rushing down the steep flanks of the mountain, overrun and destroy everything around.

About 10 A.M. we reached Kandang Badak, or the spot where rhinoceroses assemble, which is the second station, 7200 feet above sea-level. Solitary specimens of the formidable animals which have given their name to this place are still met with here; but a troop of some hundred men, accompanied by almost as many horses, must necessarily make such a din in the usually solitary forest, as at once to account for our being unable by personal observation to speak as to whether it deserves the name it has received. The rhinoceros, despite his immense size, is a shy, timid animal, who flees before man, and only attacks him when fairly compelled to do so in self-defence. The Pasanggrahan erected at this spot has several times already been burnt down by red-hot stones ejected from Gedeh. Here the path divides, one branch leading to the still active crater of Gedeh, which can only be reached on foot, the other leading to the summit of Pangerango. For the second time we changed horses, and now had the last bit of the way before us—the steep, almost precipitous, cone of Pangerango. It was enveloped in thick clouds, and it was only by the short windings of the path we could realize that we were riding up an isolated

cone of regular form, the slope of which was between 25 and 30 degrees. The cool air of these elevated regions now began to make itself felt, while our sensations bodily testified to the northern character of the vegetation around us. The tree-ferns indeed continued to grow up to the very highest point, but long ere reaching the summit they ceased to be found among the gigantic forest-pillars of the *Liquid-ambar*, but grew between dwarfish, knotted, stunted trees, whose trunks were overrun with a bright green moss, while from the branches hung festoons of greyish-green beard-moss (*Tillandsia usnioides*), greatly resembling hair. The trees, instead of stretching out their brown limbs to the air and light above, left them to droop sullenly to the ground, turning themselves, as though in pain, away from the rude wind which swept through their branches, and, as it were, seeking for warmth and sustenance from mother Earth alone. All the plants here showed a tendency to become creepers, as also to a circumscribed growth and extent of foliage, as well as uniformity of species. By 3 P.M. the whole party, including a rear-guard of irregular naturalists and sharp-shooters, had finally reached the summit of the mountain. When Dr. Junghuhn, the first man who trod this solitude, made the earliest ascent of this mountain in 1839, he found not a trace of a human step, and had painfully to make his way by rhinoceros-paths, beneath a thick overhanging canopy of leaves, and through dense underwood. Thus he finally succeeded in forcing a passage through the forest, till he emerged upon a naked patch

in the middle of the peak, where à rhinoceros was lying in the middle of the stream, while another was browsing on the edge of the forest: they fled snorting away on beholding him. How different was what we now witnessed on the same spot!

The flat space on the summit, somewhat concave in shape, and sinking gradually away, the deepest part being towards the S.W., whence issues the highest spring in Java, now resembled the bivouac of a detachment of troops. Everywhere were men and horses, with cheerful blazing fires for cooking and warming, while immediately adjoining a strawberry garden filled with delicious fruit, rose a hut for shelter against wind and weather, in which we found a surprising degree of comfort. Tables, chairs, beds, excellent provisions and drinkables, were ready for us at an elevation of more than 9000 feet above the level of the sea, so that there was nothing wanting which could in any way contribute to our comfort. Even the necessary warmth was supplied by a huge iron stove, constantly kept supplied with fresh fuel by a Javanese servant, cowering on the ground. This was the more necessary that our systems, accustomed of late to tropical temperature, were unusually susceptible to this sudden and extreme change. In the morning when we left Tjipannas the thermometer even at that early hour marked 70°, while the mercury had now sunk to 48°.22 Fahr. The longings we so often expressed, during a sojourn for months together on the bosom of the ocean, amid the moist, sultry strata of the lower atmosphere, in an almost unvarying Turkish-bath-like tem-

perature of 86°, of being once more re-invigorated by a little cold, were now being gratified to the letter.

Unfortunately our anticipated enjoyment of the view from the summit was entirely frustrated by rain and cloud: we could hardly see anything a hundred yards distant, and the only idea we could form of the gigantic mountains and splendid hill-scenery that we knew surrounded us on all hands, had to be derived chiefly from the topographical charts we found in the hut. It was only during the occasional fleeting glimpses, when the S.E. trade-wind of the upper atmosphere, generally the chief ruler of these lofty regions, and almost always accompanied by a pure, blue sky, overpowered the N.W. trade (which blew from beneath, and, trending upwards along the cleft in the western side of the crater of Mondolawangi, continually enveloped anew in clouds the summit of the Pangerango), that it was permitted us to descry, now here, now there, small stretches of the country lying spread out at our feet, or to perceive closer at hand the inner slope of the crater of Gedeh, lying exposed to our wondering vision. We did what we could to secure a few thermometrical and barometrical observations, as also to shoot, to geologize, to botanize; and many a valuable discovery was made ere night set in and compelled us to seek shelter against the raw, cold night air, in the Pasanggrahan, which had been so carefully fitted up for our accommodation. On the summit we found quite an accumulation of various elegant little plants, which recalled to us

the Alpine districts of our own land, one of which, first discovered by Junghuhn, and named by him *Primula Imperialis*, is one of the loveliest flowers in Nature, and which has never yet been found in any other part of the globe; while in the brushwood around we heard the cooing of a bird of the thrush species (*Turdus fumidus*), which, with the exception of a small, very elegant little fellow, somewhat resembling the willow-wren, was the sole representative of the feathered tribe in these elevated regions.

All our hopes were now directed towards the ensuing morning, which it was hoped would bring us better weather. By five in the morning every one was on foot, watching with anxious look the advent of the star of day. But alas! ere long all was once more enveloped for us in a dense but fine vapour, and the thermometer indicated only 47°. 33 Fahr.

About fifty feet higher than the two huts for shelter erected on the plateau rises a trigonometrical pole, which, visible from a great distance, serves as a land-mark for the government surveyors during their labours in this neighbourhood. Any clear morning, when the sky is free from clouds, one must enjoy from this free, airy out-look a splendid distant view over a large portion of the Preanger Regency. As for ourselves our panorama continued to be lamentably circumscribed, and all we could do was, to watch for those fleeting

* Now named *Cankrienia Chrysantha*. The plant most characteristic of this region was the *gnaphalium arboreum*.

moments during which the clouds lifted and gave us a brief yet comprehensive glimpse of the wondrous natural beauty of the surrounding landscape.

Pangerango, 9326 Paris, or 9940 English, feet in height, is the loftiest of the extinct volcanic cones of Java, rising on the eastern slope of an enormous crater-gulf, likewise extinct. Close in the vicinity, not above a mile distant to the S.E., and communicating with it by the ridge of Pasce Alang, 7000 (Paris) feet in height, rises another volcanic peak, Gunung Gedeh, of almost precisely identical height (9323 Paris, or 9937 English, feet). Its summit has fallen in, and from amid the débris on the floor of this ruined crater rises a second cone far less in height, but in full activity, with a deep crater, which is the true fiery gorge of the still active Gedeh. Towards 7 A.M. the clouds dispersed for a considerable space, when directly opposite us we saw the beautifully regular cone of Gedeh, with its perpendicular precipitous crater-wall, some 600 or 700 feet high. So near, indeed, did it appear to the eye that we could almost fancy it possible to throw a stone from the one summit to the other, so that it should fall exactly into the crater, from amid whose rents and cavities thick volumes of smoke were bursting forth at several points.

By 10 A.M. our caravan was once more under weigh on our return to Tjipannas. The geologist of the Expedition, however, accompanied by Dr. Vrij and one of the government employés, set off upon a rather dangerous adventure, viz.

the ascent of the Gedeh. Of this interesting excursion, Dr. Hochstetter gives the following interesting details:—

"A short distance before reaching the station of Kandung Badak, the path leaves the road by which we had come thus far. Here we had to clamber upwards as best we might, by a narrow path densely overgrown, and evidently but rarely traversed, till presently we emerged from the forest upon a tract of loose stone and scoriæ, which, sparsely covered with low bushes and grass, forms the upper portion of the peak of Gedeh. A strong odour of sulphuretted hydrogen greeted us here, issuing from a Solfatara, which nestled under the true crater in a deep savage cleft of rock. Hot sulphureous and watery vapours were emitted from among the dark crannies of the rock, the upper edges of which were coloured yellow with pure sulphur: with much difficulty we still pressed on, and finally reached the edge of the ruined crater. What a contrast presented itself here in the view before us and the landscape behind!

"Behind we could see from base to summit clear and unbroken the beautiful luxuriantly-green well-wooded peak of Pangerango, on whose highest point stood out near and distinct the trigonometrical pole, or land-mark, while from the forest was heard an occasional musket-shot, sure sign that the company of travellers from the ship were on their way down. On the other hand, when we cast our eyes forward we saw but dismal desolate groups of grey rock, around the lofty amphitheatre-shaped rock wall of the

broken-down lip of a crater, regularly constructed of pillar-like masses of trachyte, each sundered from the column immediately adjoining, beneath which was the smoking cone of the active region of the crater, a bare heap of stone and scoriæ, of the utmost variety of colour. Stretching from the vast abyss of the crater-ruins, on whose bald slope is situated the cone of the new eruption, there is visible at intervals on either side, far down, until indeed it is lost in the dark gloom of the forest, a bare rocky ravine, full of stones and débris, which the active vent of the crater has from time to time vomited forth. We had on the previous day passed the lower extremity of this stream while riding to Pangerango.

"But we were not yet at the goal of our wanderings. We still had to climb from this point, and afterwards to scramble up to the summit of the active cone. This, however, proved to be much more easy than we had thought when looking at it from below, and we arrived without any disaster at the summit.

"Here then we were standing upon the edge of a yawning crater, in full activity! Not a single step forward was it possible for us to make. In front of us lay a funnel-shaped slope, 250 feet in depth, the floor of which was covered with mud, in which stood frequent pools of boiling water of a yellow tinge. The Javanese who accompanied us stated that they had never before seen it so quiet, the crater having

always been quite full of steam and vapour. On the present occasion the steam only escaped in small volumes through a few fissures in the sides of the inverted cone, and more particularly from the cracks and crevices on the exterior of the cone of scoriæ. We could perceive only water, steam, mud, and sharp-cornered fragments of rock, the débris and rubbish formed by the disintegration of the rocky masses thrown up by the crater, but not a trace, not a vestige, of any molten stream of lava, heaped up by the present crater of Gedeh. The whole history of the activity of this volcano may be compared to the explosions of a vapour cauldron in the interior of the earth, which has been heated by the masses of old trachytic lava currents in an incandescent state, but not yet thoroughly cooled, whose eruptions formed the principal means of erecting the volcanic cone. Repeatedly up to our own times has the mountain thrown up water, mud, and stones, together with fine powdered sand and volcanic ashes, which have travelled as far as Batavia, as also masses of melted stone cemented by liquefied sand, while marvellous volumes of flame were visible to an immense distance; but at no period within the memory of man has the Gedeh poured forth the hot liquid lava, or thrown up into the air melted volcanic matter. We must regard it as in its last stage, as about to become extinct, like all the other volcanoes of Java. It is the last reaction of the internal fires against the atmosphere penetrating from without. Even the most active volcanoes of Java, such as Gunnug Guntur and Gunung

Lamengan eject only masses of liquefied rock and scoriæ, cemented by the heat, but the regular lava currents have never been observed."

While Dr. Hochstetter was occupied with this excursion to the active crater of Gedeh, the remaining members of the Expedition had reached Tjipodas at the foot of this fire-mountain, where, at an elevation of 4400 feet above sea-level, and at an annual average temperature of 63°. 5 Fahr., the first attempts were made to acclimatize in Java the valuable quinquina tree (*Cinchona sp.*).

Although for twenty years past the introductiou into Java of the cultivation of the quinquina tree, the bark of which is of such superlative importance for suffering humanity, had been repeatedly tried, this praiseworthy intention was only successfully carried into effect in 1852, through the purchase of a specimen of *Cinchona Calisaya* from the *Jardin des Plantes* at Paris by the then colonial minister of the kingdom of the Netherlands, M. Pahud, afterwards Governor-general of the Dutch East Indies. M. Pahud had the plant brought to Leyden with the utmost care, whence it was conveyed to Rotterdam for shipment to Batavia. Immediately on its arrival this plant, the progenitor of all that have been grown since, was placed in what is called the Governor-general's strawberry garden in Tjipodas, where it was protected by a bamboo shed from rain and sun, and at the time of our visit was 16 feet high. Dr. Hasskarl, widely renowned as a botanist, was, on the recommendation of Dr. Junghuhn, who had him-

self been urgently requested to undertake the duty, entrusted with a mission to Peru, whence he was to bring back off-shoots, and germinating seeds, of the various species of Cinchona from which quinine is obtainable. Two years later, a Dutch man-of-war was specially despatched to Callao, the harbour of Lima, to convey Hasskarl with his valuable booty. That gentleman accordingly brought away with him four well-rooted young trees, and the seeds of four species of Cinchona,* but only the saplings gave promise of success, whereas the greater part of the seeds, on being sown, were lost. M. Hasskarl has had the reproach cast upon him, that during his expensive residence of two years' duration in Peru, he should have collected such few data of the higher and lower limits of vegetation of the China plant, and the conditions of soil and mountain temperature under which it best flourishes, of the general influence exercised on it by storm and humidity, as also upon the annual quantity of rain it requires, whether a shady or sunny place of growth be best adapted to it, the period of flowering and fructification, the alterations which may be rendered necessary by its habits of growth at various points, as to what are its natural enemies, and how far its alkaloid properties are affected by the greater or less elevation above the sea of the spot in which it is growing, &c., &c. Nay, some persons went so far as to allege that the botanist had never seen one single

* These four species were *Cinchona Calisaya, C. Condanimea, C. Lanceolata,* and *C. Ovata.*

China plantation, and had never personally selected either the plants or the seed, but had made arrangements for being supplied with the specimens he brought by means of the native bark-collectors (*Cascarilleros*). As though still further to enhance the public discontent with Hasskarl, and the failure of his expensive mission, fate unhappily willed that his wife, who was said to be bringing with her his papers and memoranda of his stay in Peru, was lost, together with the vessel which, after several years' separation from her husband, was about restoring her to his arms, in consequence of which many questions relating to the cultivation of the China plant in northern and southern Peru remained unanswered! Hasskarl ere long returned to Europe "for his health," and the superintendence of the China cultivation was in June, 1858, committed to Dr. Junghuhn, in whose careful charge it now is, and has taken a start which leaves no room to doubt its ultimate and permanent success.

In October, 1856, there were in Tjipodas 105 China trees of 2 feet 6 inches high (41 of *C. Calisaya*, 64 of *C. Condaminea*). On 31st October, 1857, there were only 95 about 4 feet 11½ inches in height, all in flourishing condition, while 10 had died. The cause of this lamentable phenomenon could not long escape the piercing glance of Junghuhn. The first tender shoots had been planted in a Tufa soil, the fertile covering of which barely exceeded 6 to 9 inches in thickness, and were surrounded by roots and stumps of immense forest trees that had been cut down, which of course prevented

anything like expansion, and, in a word, completely stifled their growth.

In the case of the earlier plants, there was far too little attention paid to the requisite amount of shade. The timber had been entirely cleared away, and the young plants were consequently exposed during the whole day to the fierce heat of the tropics. Unless people were prepared to see the whole plantation go to ruin it was necessary at once to take protecting measures against it. Junghuhn was a man fit for any emergency, as he had already shown on the banks of his native Rhine, when the very cells of Ehrenbreitstein, with which a chivalric adventure had made him acquainted in his youth, had for once been found too narrow to hold him. So in Tjipodas, the man of resources was able at once to devise a remedy. With incredible toil, and the most fostering care and attention, nearly all the trees were, without detriment to one single twig, transplanted from a soil so little congenial to them to the adjoining Rasamala-wood, in which the proud, slight *Liquid-ambar Altingiana* imparts its own peculiar character to the primeval forest, where they were transferred to spots partly shaded, which had already been prepared for their special reception, the sites having been surrounded with trenches to carry off the superfluous water. In October, 1857, some of the trees had already attained a height of 14½ feet; by 31st March of the following year they were already 15½ feet, while their stems were 3.44 inches thick. Many of the trees planted near the forest had within

three months grown from 9 to 21 inches, while the few that remained on their old site had only gained 9 or 10 inches in height, a fact which seemed incontestably to prove that the new site was the better adapted to them. In June, 1857, the first blossom had made its appearance on one of the *Condanimea*, but it was not till May, 1858, that the majority of the trees were in full bloom, or that the ripening fruit began to make its appearance. When all the fruits ripen, Dr. Junghuhn told us he was in hopes he would secure 80,000 fruit, which, as each fruit contains about 40 seeds, would provide him with 3,200,000 seedlings. It is not indeed a question merely of ripe and at the same time fertilized seeds, but chiefly whether the bark of this plant contains in the land of its adoption, and under different conditions, that costly alkaloid quinine, which seems daily to become more indispensable in the science of medicine.

Despite the most anxious solicitude there had long been remarked in Tjipodas a gradual decay of some of the shoots, but it was only a few days before our arrival that after a most minute zealous inquiry the cause of this phenomenon was discovered. A minute insect, scarcely $\frac{1}{25}$ of an inch in length, of the *Bostrichus* species, proved to be the foe of these plants. The holes which are burrowed by this insect, are drilled quite through the wood of the stem and branches into the very pith, in which it finally stops and lays its eggs. The Cinchona trees thus bored through are irremediably ruined, but there is always the hope that, as the roots remain

sound, they may afterwards put forth new shoots. However, the appearance of this insect does not seem to be the primary cause of the disease of the trees,—on the contrary, disease is the cause of the appearance of the insect. If the other trees prove to be successfully reared, the insect will disappear, since it was convincingly proved by one of our zoologists that it had not come to the country with the Cinchona seeds and plants, but was undoubtedly indigenous to Java.

Altogether there were, in May, 1858, upon the whole island three quinquina plantations, which have been specially established with a view to the solution of certain questions of climate at various elevations, and are situated in the following localities :—

1. In Tjipodas at the foot of Gunung Gedeh (4400 to 4800 feet above sea-level), in a beautiful Liquid-ambar forest, and containing 80 plants.

2. In Bengalenzong, on the declivities of the Malabar Range (4000 to 7000 feet in height), in the midst of a considerable oak forest (*Quercus fagifolia*), containing 600 plants.

3. South of Besuki on the Ajang Range (about 6800 feet above sea-level), in a plantation* containing 21 plants, to which Dr. Junghuhn gave the name of Wono Djampie, i. e. Forest of medicines.

* According to our latest advices from Java, which extend to November, 1860, there are at present in the Preanger Regency upwards of 100,000 China plants in the very best order, so that this valuable commodity not only may be regarded as fully naturalized in that island, but the Dutch Government even complied with the request of the British Government for a certain number of seedlings for introduction into India.

The Dutch Government has spared neither trouble nor expense, and has made considerable sacrifices, to bring over the quinquina plant from its native country, where it was believed to be threatened with utter destruction, to Java, there to be acclimatized. The chances in favour of an adequate return are very great, and the attainment of this object has been secured within certain limits. Of all the tropical regions we visited, the Island of Java seems by its natural advantages to be the best capable of affording to the tree which produces the febrifuge bark, so invaluable a boon of nature to suffering humanity, a second home, amid the magnificent scenery of its mountain ranges.

However, the wide-spread idea that the China plant is exposed to utter extinction in its native land of Peru has proved to be quite unfounded. We shall revert to this subject when we come to treat of our visit to the western coast of South America, and shall take pains to solve at least some portion of the question in dispute, as to certain necessary conditions being requisite to be observed in the case of the quinquina plant in its original home, the investigation of which, the superintendent of the quinquina tree culture in Java, Dr. Franz Junghuhn, so earnestly commended to the attention of the scientific members of the *Novara* Expedition.

However, our interest was not confined to these China-tree plantations; our attention was riveted by the marvellous Rasamala (Liquid-ambar) forest in which we now found ourselves, while those fond of the chase were not less amazed

and gratified, at bringing down a splendid specimen of what is known as the Kalong or Roussette Bat (*Pteropus vulgaris*). These singular nocturnal animals hang in enormous quantities throughout the entire day from the branches of the trees, amid the profoundest stillness, till evening sets in and dismisses them to their nightly evolutions. They are then visible flying through the air like gigantic bats, or flying foxes.

While riding back to Tjipannas we remarked amid the smiling rice fields several poles with hangings of various kinds, resembling those erected on the shore in front of their huts by the superstitious natives of the Nicobar Islands, in order to keep his Satanic Majesty at a distance. The natives call these poles Tundang-Setan (talisman against the devil), and believe they can by their aid frighten away the evil spirits, while they are gathering the crop from their rice fields.

From Tjipodas the excursionists proceeded to Tjiangoer,* the present capital of the Preanger Regency, containing about 15,000 inhabitants, where some days were to be spent in excursions, collections, hunting, and other amusements, after which we were compelled by the limited time available to return to Buitenzorg and Batavia. Two members of the Expedition, Drs. Hochstetter and Scherzer, penetrated a little further into the interior, with the purpose of paying a visit to Dr. Junghuhn, to whose researches in the Natural History of Java we are so

* Pronounce *Tschipodas* and *Tschangschoor* (Sweet Water) respectively.

much indebted. The following few pages are devoted to an account of this interesting excursion.

Towards 5 P. M. we arrived at Tjiangoer, in company with Dr. de Vrij and M. Vollenhoven, and immediately set out on our journey to Bandong, so as to reach the same evening that neat little town, whose singularly favourable position, almost exactly in the centre of the Regency, makes it a dangerous rival to Tjiangoer as the seat of government. *En route* we passed Tjisokan, a small village, most of whose inhabitants are engaged in procuring edible swallows'-nests, which are found in great quantities at a chalk mountain about twelve miles distant, known as Radjamandula.* The spots at which the edible nests of the *Hirundo esculenta* are found are anything but grottoes peculiar to this product, as is usually alleged, but steep, almost inaccessible, cliffs, crannies, and fissures in the rock, in which the swallows build their nests, and which can only be reached by the utmost exertion, frequently accompanied by danger to life. They are met with partly upon the south coast, close above the raging surf, partly deep in the interior, about 2000 feet above the level of the sea, distant several hundred English miles from the nearest part of the sea-shore; and while the inhabitants of Karangbólong have to scale the almost perpendicular coast-wall by means of

* Called in the Sunda dialect Gunung Masigit, or Hill of the Mosque, in consequence of the chalk, of which it is composed, being broken into pinnacles of remarkable uniformity, and strongly resembling the appearance presented by the minarets of a mosque.

ladders* of Rotang (*Calamus Rotang*) and Bamboo, ere they can reach the entrance of the cavern, the natives of Bandong,

* As these edible swallows'-nests form a very important article of commerce among the Colonial products, and their collection provides the means of subsistence to a considerable section of the population of Java, we shall follow here the description given by Dr. Junghuhn, in his truly classic Monograph upon Java, in which (Book I. p. 468) he speaks as follows respecting the marvellous abodes selected by this species of swallow, and the perils dared by the native in obtaining their nests. "In Karangbólong, a portion of the entrance to the holes where the swallows breed is on a level with the surface of the water, and at times covered by the sea. In one of these cavities, the Gua Gedé, the edge of the coast-wall rises 80 Paris feet above low water, in a concave form, so that it actually overhangs; however, at an elevation of about 25 feet there occurs a projection, which the Rotang-ladder reaches by being suspended perpendicularly. The ladder is made by two side ropes of reed, which every inch-and-a-half, or two inches, are bound to each other by cross-bars of wood. The roof of the entrance to the cave is only 10 feet above the sea, which even at ebb-tide washes the flow throughout its extent, while at flood-tide the mouth of the cave is entirely closed by the sweep of the rollers. Only during ebb-tide therefore, and with perfectly smooth water, is it possible for any one to penetrate into the interior. Even then this would be impossible, were not the rocky vault, or roof of the cavern, pierced through, eaten away, and corroded into innumerable holes. By the projecting angles of these holes it is that the strongest and most daring gatherer who first makes his way in, has to hold on, while he attaches to them ropes made of Rotang, which thus hang from the roof to a length of four or five feet. At their lower extremities other Rotang ropes are securely fastened crosswise, thus running, rather more horizontally, parallel with the roof, so that they form a hanging bridge as it were along the whole length of the roof. The roof is about 100 feet wide, and from the entrance at the south to the deepest recess in the north end, the cave is about 150 feet in length. Although only 10 feet high at the entrance, the roof becomes gradually more and more lofty as the cavern retreats, till at the farthest extremity it is about 20 to 25 feet above the sea-level. Before any one of the nest-hunters proceeds to erect his ladder, and again before proceeding to climb up upon it in such fearful proximity to the thundering swell, a solemn prayer is proffered to the goddess or queen of the sea-coast, whose blessing is invoked. At this place she bears the name of *Njai-Ratu-Segor-Kidul*, or sometimes *Ratu-Loro-Djunggrang*, and has dedicated to her in the village of Karangbólong a temple, which is kept scrupulously clean. Occasionally the gatherers make also a solemn sacrifice at the tomb of *Serot*, who, according to a Javanese legend, is revered as the first discoverer of the bird-nest caves. (The meaning of the above Javanese words is as follows: *Njaï*, the title of

on the contrary, are compelled to climb up to a yet greater elevation among the precipices and rocks, ere they are able to reach the openings that lead to the various hollows.

While the birds are breeding, or if they have their young, which happens four times each year, one half remain in the cavities, and both males and females take their turns in sitting to brood, every six hours. Each nest is inhabited by a pair of swallows, so that if 1000 nests are found in a cave, they are inhabited by 2000 grown swallows (half male, half female). The fecundity of this bird is so great, that, although the nests are gathered four times a-year, and that somewhere about a million of their progeny is at each plucking wasted or destroyed by the collectors, they never seem to diminish. The six caves at Bandong give yearly about 14,000 nests, that at Karangbólong about 500,000: one hundred nests weigh about one *catty* (1¼ lb.), and one hundred catties (125 lbs.) make one *picul.** For each picul of these nests, which they look upon as a special delicacy, the Chinese pay from 4000 to 5000 guilders (£350 to £420). The nest-gatherers are apparently a special class, whose occupation is handed down from father to son.

Close to the village of Tjisokan, a very elegant wooden bridge, constructed on the American system, but entirely erected

honour of a female, corresponding to our "Madame:"—*Ratu*, Queen:—*Segoro*, ocean:—*Kidul*, south:—*Lero*, maiden:—*Djunggrang* is a surname.) Compare "Java, its physical Features, Vegetation, and internal Structure," by Franz Junghuhn. Leipsig, Arnold, 1842.

* The picul varies in weight between 125 and 133⅓ pounds.

out of the resources of the colony, has been thrown over the Tjisokan river. The roads, although broad and kept in excellent order, nevertheless lead occasionally over hills so steep, that to descend them in a heavy carriage, especially considering the rapidity with which the Javanese drive, is exceedingly uncomfortable, and even dangerous, although the wheels are in such cases provided with a solid "*sabot*," and where this seems likely to prove inadequate, a number of natives hang on to the wheels behind, who for a small gratuity control the rate of descent by means of ropes.

At last, about midnight, shortly before which we passed the river Tjitarum by a ferry, we reached Bandong, and on gaining the residence of the Javanese Regent, Raden Adipati Wira Nata Kusuma (spelt by the Dutch *Koesoema*, but pronounced as spelt in the text), were received, notwithstanding the lateness of the hour, in the most hospitable and friendly manner. Here we found everything, even to the minutest detail, managed in the European fashion; and no guest would imagine that he was in the house of one of the Mahometan princes of Java, were he not reminded of the fact by the rich Oriental costume of his host and his family, as also by the Javanese domestics, bearing elegant richly-adorned Siri, or betel-boxes, of gold or silver, and invariably tendering their services to their masters in a stooping posture, or rather sliding after them upon their knees. For the Javanese, too, greatly affect the leaf of the betel, mingled with powdered areca-nut, powdered coral, or pearl chalk, and

Gambir (*Nauclea Gambir*); however, this mixture is not chewed, but placed between the lips and the front teeth, where it is barely kept long enough to admit of the saliva collecting in the mouth of a blood-red colour, which they spit out, the poor in their huts into cocoa-nut shells, the wealthier classes into copper vessels, but princes and rich people into golden spittoons. Even the ladies have given way to this custom, and the native belles make use occasionally of this filthy juice in order to keep importunate admirers at a distance!

Supper, which, in anticipation of our arrival, had been made ready for us, was served entirely in the European mode, and our Mahometan host went so far in his assimilation to Western ideas as to overcome certain religious scruples, and himself join us at table. As we sat round the board long after midnight the Assistant Resident of the district made his appearance, M. Visscher van Gaasbeek, a Hanoverian by birth, who however has lived twenty-five years in this country, and immediately placed himself entirely at our disposal. We now proceeded to chalk out our plan of operations for the ensuing day, and the Regent gave orders in advance to have in readiness his own coach and several saddle-horses for an excursion to Lembang, the residence of M. Junghuhn. Before we separated, the Regent, with whom unfortunately we could only communicate through a Malay interpreter, with much condescension produced out of a leathern case his own elegantly-engraved *carte-de-visite*, and expressed his desire to exchange with ourselves. The Java-

nese princes seem to attach especial importance to anticipating the Europeans in good-breeding, and forestalling the desires and wishes of strangers. At last, towards 2 A.M., we went to rest, and despite the fatigue of the previous day, were by 5 A.M. seated in the carriage of the Regent, *en route* to the residence of Dr. Junghuhn. We drove the two first posts, about 10 *paals*, when we exchanged that mode of conveyance for our horses, which in less than an hour brought us to Lembang, situated about 4000 feet above sea-level, in an almost European climate. Standing alone close to this village is the beautiful dwelling of Junghuhn, at the foot of the volcano Tangkuban-Prahu, and surrounded on all sides by beautifully-laid-out gardens, in which, cut off from the scientific world, he lives with his family. Everything around gives to the stranger a thoroughly home-feeling; in every countenance is visible content, in every glance the most heart-felt cheerfulness.

Franz Junghuhn, a German by birth, from the district of Mansfeld in the Harz-mountains, saw many years hard service as a military surgeon in the service of the Dutch Government, and at present holds the appointments of Inspector of Scientific Explorations, and Director of the entire China-tree cultivation of the Island of Java, with ample means for the solution of this problem. This indefatigable naturalist (of whom there is an excellent engraving at the Royal Botanical Gardens at Kew), to whom science is indebted for the most comprehensive information relating to Java, has

himself ascended 45 different volcanic peaks, and that at a period when there were no bridle-roads leading to their foot, but only those singular zig-zag paths which the rhinoceros has worn for himself, in order to browse at his leisure and undisturbed on the roots and rich grass of these lofty pastures. His imposing exterior and expression of countenance all betoken the indefatigable perseverance and gigantic powers, both physical and intellectual, which find expression in his incomparable work upon Java, and his great chart of that island.

The renowned *savant* received us like old friends, with the most delightful fervent hospitality, related to us his very latest experiments and observations with respect to the cultivation of the quinquina plant, and presented us with his last work,* to which he seemed exclusively to devote his entire activity. For our own part, we in return promised Dr. Junghuhn to make most special inquiries upon the subject during the period of our stay in the native country of the Cinchona, and to endeavour to be able to answer to the questions we were charged with; as by so doing we hoped to re-pay in some degree our tribute of gratitude, for the countless instances of personal interest and attention which had been shown us by the scientific gentlemen in Java, as well as by all the government officials.

* Toestand der aangeweekete Kinabomen op het eiland Java in het laatst der Maand Julij, en het begni van Augustus, 1857. Kort beschreven door F. Junghuhn, 116 pp.

Adjoining Junghuhn's dwelling, a large proportion of the coffee beans raised in the Preanger district are prepared for the European market. The Government has farmed the process to one M. Phlippan, and first deals with the beans when, packed in sacks, they are ready for exportation. The entire coffee crop of the environs of Bandong, averaging about 80,000 piculs (or 10,000,000lbs.), is conveyed annually over the hills to Lembang, where the fleshy berries are first shelled and made ready. For this purpose they use the Brazilian or moist mode of treatment, by which process, however, according to the opinion of connoisseurs in coffee beans, much of their flavour must be lost. But, instead of attributing the well-marked decrease of flavour of the Java coffee bean to this mode of preparation,* others are disposed to find the cause of this deterioration in degeneration of the coffee-shrub itself, and accordingly the Dutch Government sent out to Java the well-known botanist Professor Vriese (with appointments† which must appear almost fabulous to a German botanist), in order to determine upon scientific data the cause of the falling off of the coffee bean. The sending out to Java a Professor of the University of Leyden, who had never before been in the Dutch East Indies, in order to en-

* At all events, among the planters up the country the opinion prevails that the coffee-beans prepared by the native population on what is called the parching method are of far finer and more durable quality than those prepared by the former process.

† Professor Vriese, besides having all expenses paid, drew a salary of £1000 per annum, besides 10 guilders (16*s.* 8*d.*) a-day for every day passed by him in the interior of the island while engaged in its explorations.

lighten the practical coffee planters, already on the spot, as to the deterioration of that plant, made anything but a favourable impression. Some bitter wags, indeed, of whom there is no lack in Java, any more than of Punches or Charivari at home, said that the mission of Professor Vriese was as singular as if a native Javanese had been despatched to Holland in order to teach the farmers there how to make *cheese.*

Nevertheless, the solution of this question of the degeneracy of the coffee is of the very highest importance to the country, as it produces annually about 800,000 piculs (100,000,000 lbs.) coffee beans,* and as its climate and soil are eminently suitable for a far more extended development of that branch of cultivation, which was first introduced from Mocha into Java, about 1718, by the then Governor, Hendrik Zwoardecroon.† The entire coffee crop must be delivered by the coffee planters to the Government at a fixed price, and while paying in the interior $3\frac{1}{2}$ guilders (5*s.* 10*d.*) per picul (125 lbs.), it fetches in Batavia, where the people are far more

* The commercial and statistical particulars of Java, for which we are mainly indebted to the kindness of Mr. Fraser, the Austrian Consul in Batavia, will be specially considered in a different part of the work.

† The Javanese agriculturist, especially the coffee planter, is sadly tormented by three kinds of grass, which Dr. Junghuhn has named the Javanese Trinity, and which are invariably found with the coffee plant—*Erichthitas Valerianifolia* (which was introduced from Mocha with the coffee shrub, and was never before known in Java), *Agerahun Conisoïdes*, and *Bideus Sundaica.* The civet-cat, too (called *Luah* in Javanese, Jjáruh in the Sunda language), does great damage to the coffee plantations, just as the crop is being collected. It eats only the fleshy part of the brown berry, the beans, at least according to what the Javanese say, actually gaining a flavour by the process to which they are subjected in the maw of the animal!

heavily taxed, 9 guilders (15*s.*) per picul. The Netherlands Trading Company (*Nederlandsche Handels-Maatschappy*), which possesses the sole right of shipment, pays the Dutch Government from 28 to 30 guilders (46*s.* 8*d.* to 50*s.*) per picul of coffee, which it sells in the European market for its own account. How thoroughly such a monopoly must check the growth of trade and commerce may be best seen in the stagnation of haughty old Batavia, as compared with the youthful, flourishing free port of Singapore. The Dutch Government has, however, within the last few years taken a stride in the direction of liberalism, and has thrown open a portion of the products of the Island (as, for example, sugar, the whole of which Government itself had hitherto sent to Holland) to public auction on the spot; and it is hoped this system may ultimately be extended to other colonial products, especially coffee, and that a little later, not alone Batavia, Samárang, and Soerabaya may be declared free, but that all the harbours may be thrown open to free trade. With this question of free interchange of commodities is intimately bound up that of compulsory labour, which consists in the natives of the interior being compelled to work for the Government at certain fixed rates. In all districts where the Government owns coffee or other plantations, the cultivation of these must be attended to by the natives of the nearest villages, for a remuneration fixed by the Government. The coolies or porters must, for the fixed price of $2\frac{1}{2}$ or 3 doits per paal, carry goods or do service as runners or messengers, while free labour is at

least four times as dear. A party, strongly supported at home, has arisen in Java, advocating the doing away with compulsory labour throughout the island, but, owing to the many important interests imperilled by such a policy, it has been very generally repudiated. It is impossible in Java to broach the topic of doing away with compulsory servitude without inaugurating an envenomed discussion. For this question concerns many planters and Government officials not less closely than that of the abolition of slavery does the planters of the southern States of America. On this point we have heard such widely different opinions pronounced by experienced, thoughtful, impartial men, that we are the less disposed to express, on the occasion of so short a visit as ours, any decided sentiments, since such would have probably been entirely changed, or at all events modified, if we had lived all our lives among the natives, and had become better acquainted with their customs and peculiarities of character.

It is believed—such at least is the general impression—that in a land so favoured by Nature as Java there is but little to be hoped for from free labour, as the requirements of the natives are very limited, and easily satisfied. Abandoned to his own impulses of activity, the Javanese would only work sufficiently to supply what was necessary for his mere subsistence, or would only perform any extra duties so long as the imposition of regular labour does not set itself in direct antagonism with his docile, gentle disposition. The manners and customs of the country, the condition of the populace re-

lative to their princes and chiefs, are favourable to the condition of forced labour, in which they have been confirmed by their Dutch conquerors, thus rendering it less perceptible and intolerable. It is patent to all that since the introduction in 1830 by General Van den Bosch of the Culture system, or system of compulsory labour, the internal state of the colony has enormously benefited,* and the revenues of the Government increased in a most extraordinary degree. In fact, what is known as the *Batig Stal*, or balance of the colonial administration for the past year (1859), gave a total of 41,000,000 guilders (£3,416,000). But the pecuniary profits which the State Treasury wrings from the labour of its subjects are, unfortunately (as was amply proved in the South American colonies during the days of Spanish ascendency), not always a correct standard of the prosperity of a country or of the felicity of its inhabitants.

In company of Dr. Vrij the geologist of our Expedition ascended from Lembang the volcano of Tangkuban Prahu, whence, following an excellent route of travel drawn up by

* In 1859 the most important of the colonial products, grown for account of the Government, presented the following quantities :—

Coffee	... ...	piculs 727,000 (of 125 lbs. each)
Sugar	... ...	„ 901,000.
Indigo	... ...	558,800 lbs.
Cassia	... ...	256,000 „
Cochineal (a failure in the crops owing to incessant rains)	...	6,700 „
Tea	... ...	2,057,400 „
Pepper	... ...	45,000 „

The duties on imports and exports for that year in the islands of Java and Madura alone amounted to 7,440,579 guilders, or £620,048.

N.B. The picul of 125 lbs.=136 lbs. 10 ounces avoirdupois.

Dr. Junghuhn, he was enabled to visit all the more important points of geological interest in the Preanger Regency. Of these two highly interesting excursions, which derived an additional charm from the cordial hospitality of the Javanese princes, we borrow from Dr. Hochstetter's memoranda the following particulars:—

"On the northern side of the table-land of Bandong, which is a veritable garden of Eden, hemmed in by roaring volcanic mountains, there rises a mountain chain 6000 feet above the level of the sea, and 4000 above the lofty plateau of Bandong. In this range three peaks are conspicuous. The native, accustomed to indicate each majestic natural feature of his lovely native land by some name which gives a clear idea of its peculiar character, or expresses the emotion it makes upon his senses, has named the easternmost truncated conical peak Gunung Tungul (7800 feet), that is, the Broken Stump or Tree, and affirms that the long central ridge of Tangkuban Prahu (6427 feet), or the Inverted Boat, was formed by the overturned trunk of the tree, while the third very serrated peak, the Buranguang (5690 feet), or Boughs of the Tree, forms the crown of the tree with its branches and twigs. Only the long central ridge, the actual hill, though its shape would not readily lead us to suppose so, is at this day an active volcano. Its crater is one of the most extraordinary spectacles in the volcanic system of Java. Formerly it was necessary to follow in the tracks of the rhinoceroses up the sides of this mountain, and the ascent was not indeed without danger, since it

occasionally happened that the traveller, while treading some of these funnel-shaped, narrow, tremendous defiles, unexpectedly found himself at some sudden turn face to face with one of these gigantic animals, and that, with a precipice on one hand and a wall of rock on the other, there was no visible means of escaping. Under such circumstances there was nothing for it but to fight for life and death, until the stronger marched over the corpse of the weaker. At present an excellent bridle-path leads from Lembang to the summit of the mountain, for the construction of which the community is indebted to Dr. Junghuhn.

"On the morning of 18th May we set out from Lembang for the summit of Tangkuban Prahu, in company with Dr. de Vrij. The Regent of Bandong had sent us capital horses of the pure Macassar race, and, followed by a crowd of well-disciplined Sundanese, we at length after a two hours' ride stood at the edge of the crater.

"Dense clouds of vapour filled the abyss below, from which at a considerable depth and in various directions issued the most appalling sounds, as though hundreds of steam engines were sobbing at work far beneath us, or like the broken sound of water falling in spray from a great height upon the rocks. Some dead trees standing on the brink of the abyss had a blackened appearance as though they had been charred, which we ascribed to the sulphureous vapours, that must be evolved with most destructive power when the crater is in full activity. Into this hideous abyss we now prepared to descend, by a

narrow, steep ledge of the rock, which gradually lost itself among the vapour between two perpendicular, precipitous walls. We followed the Javanese, who were scrambling down before us, having ourselves given orders to be conducted if possible to the bottom of the crater, and therefore continued on as best we could, confident that those people had already often descended into the depths to get themselves sulphur.

"Fortunately the vapours dispersed during our arduous clamber, and there at one view lay plain before us the fearful chasm from its floor to the rim running round it. With amazement and surprise, we perceived that the ledge on which we stood was but a narrow central ridge, separating two deep nearly circular volcanic cauldrons, which were both surrounded by a lofty ellipse-shaped crater-wall! There was also a singular double or twin crater. In both cavities, right and left, white clouds of steam rose hissing and sputtering to the height of the rim. In the left-hand or western crater, which the natives called *Kawah Upas*, or the Poison Crater, we perceived in the midst of the smoking *solfataras* a tranquil pool of water of a sulphur-yellow hue, while the lofty internal slopes of the crater, nearly 1000 feet high, were densely covered with brushwood, down almost to the bottom. Very different was the eastern crater, *Kawah Ratu*, or King's Crater; its floor seemed to consist of dried mud, from the clefts and springs in which steam and sulphureous vapours were constantly bursting impetuously forth. The wall of this crater, not above 500 or 600 feet high, was naked and

bare to the very summit. At the first glance one could almost fancy he gazed on an expanse of snow amid a green forest, so bleached and greyish-white did everything look, owing to the rocks being pulverized and changed by the vapours which continually issued from the soil. Above these white desolate masses of rock were distinguishable the blackened, charred, knotted stems of bushes and trunks of trees, the relics of the vegetation formerly here, tokens of the last eruption in 1846, in which this King's Crater threw up boiling mud, impregnated with sulphur, besides sand and stones, till throughout an extended area the green forests on every side were killed or desolated. Already however the rich green of the fern, and the *Thibaudia* (not unlike our own whortleberry), is seen shooting up amidst the bare stones, in close proximity to the blackened trees and shrubs, charred and altered by the action of the sulphureous vapours and the soil, impregnated as it is with sulphur.

"Continuing to scramble forward, we reached in safety the floor of the Poison Crater, and had to observe the greatest vigilance, for the entire ground around the boiling lake in the crater to the steep walls consists of nothing but smoking solfataras, or a dense crust of sulphur, full of holes and fissures, over the cooled surface of which the traveller walks, constantly in danger of breaking through, not indeed into a fathomless abyss, but into boiling hot, bitter water, in which we would counsel no one to take a foot-bath. If the crust be broken off, there are seen shining beneath the most exquisite

lustrous crystals of sulphur. This sulphur, which is exhibited here piled up in immense masses like small hills, is the same as that which occasionally entices the Javanese into these appalling abysses. The most powerful solfatara, which lies exactly in the middle ridge, and like a geyser throws up to a height apparently of one or two feet a column of boiling water, consisting in part of sulphur, is for that reason unapproachable by man.

"From the Poison Crater we climbed over into the King's Crater. The hard masses of rubbish thrown out during the last eruption afforded firm footing here, until we got near the sputtering solfataras, when the hot yielding mud made further progress impracticable.

"The visit to these two craters, which change features from year to year, furnished much material for observation. It was long past noon when we retraced our steps upwards along the precipitous path by which we had descended. Ere long we found ourselves once more on the summit, protected from the sun's vertical rays by the grateful shelter of the hut which Junghuhn had erected here, and from which we could take in at one glance, in all its vast proportions, the entire abyss, with its two smoking craters in all their horrid sublimity. The oval of the exterior rim measures not less than 6000 feet in length by 3000 in breadth, and from the upper wall the descent sheer into the abyss is not less than 800 feet perpendicular.

"This was the last crater which we had an opportunity

of visiting while in Java—our further peregrinations being directed towards the schistose formation abounding in petrifactions, which is found in the S. W. mountain range of the table-land of Bandong.

"On the evening of the 18th, after we had returned from Tangkuban Prahu, we left Lembang, still in the company of Dr. de Vrij, who sacrificed his own convenience to accompany us throughout our interesting tour, and returned to Bandong.

"Junghuhn had sketched out a second *carte de voyage*, which he had sent to the Resident of Bandong, with a request that this gentleman would make all necessary preparations to enable the projected excursion to be made in the shortest possible time, and for our comfort while on the road. We thus found everything prepared before-hand, and, after passing a most agreeable evening with the Resident and the Regent of Bandong, the latter of whom caused his dancing girls to execute in our presence some of their most characteristic national dances, we were enabled to start early the following morning to prosecute our journey further among the mountains.

"Gratitude to M. Visscher, the Assistant Resident, and to Raden Adipata Wira Nata Kusuma, the Regent of Bandong,* makes it an imperative duty that we should make

* Since this was written a number of the Dutch officials and *savans* at Java, who showed so many civilities to the Austrian travellers, were decorated by our Government with Austrian orders, among whom was also the Raden Adipata Wira Nata Kusuma, the first native Javanese Regent ever decorated by a foreign power. The

the most ample acknowledgment for the great pains taken by both those gentlemen to enable us, without losing time consulting about other cares, to devote our entire attention to scientific examination. Indeed, the whole arrangements of this trip may be held to indicate what the Dutch Government is able to attain by the astute policy of leaving the executive power entirely in the hands of the native chiefs, and with what admirable exactness the despotic orders of these two united powers are carried into execution.

"The brother of the Regent of Bandong, a truly chivalrous soul, but imperious and full of aristocratic hauteur in his deportment towards the peasantry, was our companion and guard of honour. All our material requirements had been cared for by the Regent in the most luxurious profusion. Four servants and a special cook, together with a number of coolies, were sent in advance to our next designated resting-place, sometimes in the heart of a forest, or upon a hill, or in a narrow defile, so that on our arrival we found our table already set for us. On these occasions, when there was no Pasanggrahan or comfortable hut at hand for our mid-day siesta, or for our accommodation at night, we found an elegant hut of bamboo and palm leaves (of which materials

prince was extremely delighted when he was informed of it, and said he longed for the hour when the imperial decoration was to arrive that he might put it on and wear it. Singularly enough the presents and letters of acknowledgment sent to the Dutch Government in the Hague for remittance, were not forwarded direct by the mail steamer, but as customary by sailing vessels, so that they only arrived six months after they were presented!

the Javanese construct a thousand articles of every-day use) newly erected, and containing dining-room, sleeping-apartment, and bath-room. In order to travel with as much celerity as possible, our riding horses were changed three or four times a-day. The fresh animals were everywhere ready for us to mount. At those points where petrifactions were likely to be found collected together natives would be sent forward, and that not by twos and threes, but by dozens and twenties, who were charged to dig and collect together whatever was found, so that all we had to do was to select what we required, when we found we had a splendid collection without trouble or loss of time. Even on roads seldom frequented, in outlying districts among the mountains, we found everything arranged anew, and we do not exaggerate when we say that between forty and fifty small bridges and narrow stiles made of bamboo and with bamboo balustrades must have been constructed solely to make this path passable. But still more particularly we had occasion to remark, that when it was necessary to descend into the defiles, which would naturally be of special interest to a geologist on account of their explanations of the phenomena of nature, fresh paths had been made, and all obstacles presented by the rocky soil overcome by means of steps cut in the rock or bamboo ladders! And all this had been planned and executed after the Regent had been informed of the day fixed for our departure from Bandong on our projected tour.

"No fewer than thirty-eight mounted Sundanese, all gaily dressed in their national costume, being in fact the chiefs and magistrates of the district, had attached themselves to us with all their retinue, besides a number of porters to attend upon the cavalcade, by all of whom we were cordially welcomed. Towards evening we entered amid music and dancing into the village, which it had been arranged was to be our quarters for the night, and amid more music, and a general gathering of the population, we once more, in the grey dawn of the next morning, mounted our horses. Such is the mode of travel in Java when a Junghuhn prescribes the route, when a Dutch Government official issues the requisite orders, and when a native Regent carries them out.

"On the 19th May we set off in an easterly direction from Bandong for the river Tjitarum. Our object was to explore the beautiful natural defile which is presented by the deep chasm which forms the bed of that stream, where it has forced a passage in a northerly direction through a round-backed range of green-stone and porphyritic mountains which spring from the table-land of Bandong, forming in this part of its course the beautiful water-falls of Tjuruk-Kapek, Tjuruk-Lanong, and Tjuruk-Djombong. In close proximity to the very oldest volcanic formations of Java, one sees here, laid bare by the river, lofty walls of the latest fresh-water strata of the plateau of Bandong. We now rode through the porphyritic ridge to the rocky cone of Batu-Susun, on the flank of the Gunung Bulut, formed of vast

columns of a sort of porphyritic green-stone, and the same evening reached Tjililui, the chief town of the district named Rongga, owing to its richness in petrifactions. Not greater was our surprise at our exceedingly hospitable reception, than at beholding, as we sat down to our evening meal in the Pasanggrahan where we were stopping, a huge table drawn forth, loaded with petrifactions and geological specimens, which the Wedanah had collected, and which, classified according to a chart of the district which he had himself prepared, he now placed at our disposal. The name of this spirited Sundanese is Mas Djaja Bradja, Wedanah of Tjililui.

"On the 20th we inspected the spot itself where these are found. By daybreak we were *en route* for the chalk-kilns of Liotji Tjangkang, where a coral bank, abounding in petrifactions, lies full in view from the summit of an adjoining eminence. Hence we directed our steps in a S.E. direction, getting deeper into the mountains, in the neighbourhood of Gonnong Gatu, renowned for the numbers of tigers which range the immense wilderness of *allang* grass (*Imperata Allang*), which now forms the covering of these mountains, utterly denuded as they are of their original vegetation, and in which they find plenty of prey among the stags, wild boars, and buffaloes. Hunting however was not our object, but the succession of chasms, 100 feet deep, worn through the soft pumice and trachytic tufas by the action of the Tji-Lanang and its little tributary streams. First we had to scramble down to the confluence of the Tji-Burial and

the Tji-Tangkil, where, in close proximity to the dykes of trachyte, several well-preserved *conchylia* were found amid the rubbish that had been detached from the sides of this cavity, which are composed of a sort of muddy tufa. After riding at full speed through a thinly-inhabited mountain district, in order to avoid an impending thunder-storm, we luckily reached the little mountain village of Gunung-Alu, lying on the Tji-Dadass, at the foot of a mountain ridge, which forms the water-shed between the northern and southern coasts of Java.

"On 21st May we set off for the valley of the Tji-Lanang, which stretches beneath the steep sandstone acclivities of the Gunung Sela, another spot where petrifactions are exceedingly abundant, and where the remains of the fossils may be observed in the position they originally occupied, imbedded in the strata of mud and sandstone. A species of fossil resin is also frequently found there, in juxtaposition with other beautiful fossils. From this point we followed the valley of the Tji-Lanang in a northerly direction, and on quitting it we came upon a little traversed road leading to the valley of the Tji-Tjamotha, at the calcareous-brecciose rocks of Batu-Kakapa, and still further on reached the mountainous village of Tji-Jabang, whence we descended once more to the river Tji-Tarum, which at this point passes through a narrow cleft in the rock, more than a thousand feet deep, forming thus the grandest waterfall in Java, as it breaks through the western barrier range of the plateau

of Bandong, consisting of porphyritic-greenstone, trachytic-basalt, and perpendicular cliffs of chalk. Below this, after a series of splendid cascades, it becomes a navigable stream, flowing gently over the terrace of Radjamandala.

"The majestic scale of the natural scenery of Java is seen fully developed in these savage, awful rocky defiles, shaded by primeval forest, and haunted by every description of wild animal. There are three points of special interest, Tjukang-Raon, Tjuruk-Almion, and Sangjang-Holut, at any of which one may study in the very bowels of the earth the geognostical structure of the Lanang chain, where the river has burst through. These points lie quite near to each other on the edge of the stream which here frets in its channel, hemmed closely by the rocks, but in order to reach any one of them it is always necessary to retrace one's steps to the village of Tjijabang, on the plateau of the mountain, and thence scramble down and up again the precipitous rocky wall in height from 1000 to 1600 feet! One can readily believe what Junghuhn writes in 1854, that 'although Tjurak-Almion' (dust or vapour fall) 'is the grandest waterfall in Java, no European had, as yet, visited the spot but himself.' It was here especially that we had occasion to notice what pains the natives had taken to render the various localities more accessible. We found fresh-hewn steps, ladders, and Rotang ropes, and thus we were enabled, so to speak, to tread in the footsteps of Junghuhn.

"On the 21st we could only visit the Tjuruk-Baon,

where the Tji-Tarum, raging along in its entire volume, is compelled to pass through a gate of rock not above 12 feet wide. A frail-looking bamboo ladder, with Rotang ropes suspended on either side at a dizzy elevation above, leads down the perpendicular walls of this stone portal.

"On the morning of the 22nd we visited Tjuruk-Almion, the finest waterfall of the Tji-Tarum, which is here precipitated over a precipice of greenstone forty feet in height, and thence, after passing the steep basaltic chain of Gunung-Lanang, we descended from a height of 2653 Paris feet, into the deepest part (990 Paris feet above sea-level) of the chasm formed by volcanic eruption in the mountain Sangjang-Holut, where close to the steep broken rim, and in juxtaposition to the tertiary formations on the level of Radjamandala, the perpendicular sandstone banks of the river leave a passage only 10 feet in width.

"The same day we reached the little village of Gua, at the foot of the northern side of Gunung Nungnang, an enormous mass of limestone, whose steep sides form a portion of the extensive limestone barrier, which bounds the table-land of Radjamandala to the southward. Gunung Nungnang is traversed by fissures and clefts from top to bottom, in which the Salangan swallow builds edible nests, which the natives gather for the Regent, not without peril to life.

"On the 23rd May we carefully explored Sangjang Tji-Koro, a limestone-hill, through which one arm of the Tji-

Tarum, after it has burst through the barrier-ridge, flows in a subterranean channel; interesting in a geological point of view, because at this point we find the very same limestone rocks which in an upright position form the structure of the hill, lying horizontally on the flat plain of Radjamandala, on the opposite bank of this brook. At Radjamandala we once more struck the main road, and found our travelling chaise ready, which conveyed us to Tjiandjur, and thence back to Batavia."

While the geologist of our Expedition was occupied in the excursion above described, the commodore and his companions witnessed a most interesting spectacle in an ethnographical point of view. The Javanese Regent of Tjiandjur prepared a great fête, to which all the populace were invited, in the great hall of the palace, where a variety of entertainments, games, and dramatic representations took place. Here, as at Bandong, the interior of the house was entirely furnished in the European fashion, and only the ear-splitting, deafening tones of the gamelong,* the stout, bustling female house-keeper, who, richly apparelled and wearing yellow unmentionables, did the honours with a somewhat waddling gait, and the Oriental dress of the Regent, behind whom a couple of Javanese servants, crouched on their hams, carrying a neatly-carved silver box of exquisite workmanship, containing the ingredients for the betel, recalled to our recollection that we were in Java, in the residence of a

* A genuine Javanese musical instrument, consisting of a number of bells all differently tuned, which are struck with two small bamboo-sticks.

native prince. The stiff, troublesome formalities of the Dutch were outdone by those of the Javanese: nay, so great is the observance of etiquette by these people, that even the nearest relatives of the house are fain to take up their place in the verandah or colonnade which runs round the house, but do not dare venture into the saloon itself. In this latter, besides the Regent and his consort, there were only the European guests invited, while the people thronged the doors and windows as spectators of what was going on. The fête began with some very monotonous, infinitely tedious dances executed by the *Bayadères*. In the choreographic art, despite the important part which dancing plays in their religious worship, the Javanese, like all the other populations of Asia, lag far behind the natives of the north. True, the dance with them has a widely different meaning, compared with that which we attach to it, who waltz and polka away in joyous, frolicsome mood, whereas the Asiatics, the Malay and the Hindoo, also dance during seasons of grief and anguish; with them dancing is nothing but a mode of expressing their feelings, whether these be grave or gay, joyous or sad. And so deeply is this custom implanted among the coloured races, that we have ourselves seen in Costa Rica Indian parents, who had been converted to Christianity, dancing before the dead body of their child, which was about being committed to consecrated earth.*

* Die Republic Costa Rica, in Central-America, mit besonderer Berücksichtigung der Naturverhältnisse, und der frage der deutschen Answanderung und Colonisation.

The figures of the dance performed by the Javanese dancing-girls were nothing but a series of very slow rigid movements of advance and retreat, in the course of which they went through all sorts of attitudes and contortions with their hands and fingers. We were informed that these dancers were representing four sisters who were searching for their lost mother, and by their various postures and figuring hoped to obtain her again from the deity. This exhibition was succeeded by a war-dance, performed by eight maidens clothed as warriors, which however scarcely differed from the former, and was not less tedious. These dancers all appeared in extremely elegant richly-appointed dresses, which unfortunately only made the ugliness of their features more disagreeably conspicuous. Amid all these representations the deep boom of the gamelong almost unceasingly resounded in our ears, being struck, evidently for the purpose of stunning the senses, by a crowd of Javanese cowering on the ground with their feet crossed beneath them, while from without there fell on our ear the tunes of a brass band, especially noticeable by its overpowering penetrating sound. About 10 P. M. a number of rockets and fire-wheels were let off, and a disorderly crowd of maskers, on horse and foot, to the great delight of the assembled populace, made their appearance and marched about a dozen times round the great room. The chief honours of the entire procession were

Reisestudien und Reiseskizzen aus den Jahren 1853 und 1854. Von Dr. M. Wagner and Dr. Karl Scherzer. Leipzig, Arnold'sche Buchhandlung. 1856. S. 196—197.

reserved for a transparent serpent, at least 20 feet long, which was borne along in the air by six or eight youths, who imitated with surprising address the wriggling motions of that lithe reptile.

To a European observer, however, what was going on in one corner of the great room seemed far more extraordinary and surprising. A number of native fanatics were standing here round a heap of red-hot coals and ashes, before which a Mahometan priest, holding in his hand a small open book, was murmuring a prayer, accompanied by doleful cries and unintelligible groans. Several natives sprang barefooted into the fire, and turned about several times in its midst. The priest also, singing and praying the while, skipped upon the red-hot floor, apparently with the intention of inciting the by-standers to yet further exertions. The whole exhibition bore the character of being a form of religious expiation, although it was carried on amid all the noise and fun of a popular festival.

A still more painful impression was made by several Javanese, who placed iron circlets set with fine sharp points on the cheeks, forehead, and eyes, and thus accoutred, twisted their bodies about in every conceivable direction, as though they were striving all they could to drill deep into their flesh with this heavy iron instrument. The leading idea contemplated in this rude fearsome exhibition, seems, however, to have been simply to amuse a circle of curious spectators, and gain their applause.

The Javanese Regent, Radhen Adhipati Aria Kusuma Ningrat, who gave this fête, a tall, robust man, of about fifty years of age, is held in high esteem by the inhabitants of his district, not alone for his political worth, but also for his intellectual qualities. He is an author and a poet, and availed himself of the opportunity to present to the foreign guests his last poem, an epic.

Early on the morning of the 17th the entire company of travellers set out from Tjiandjur on their return to Batavia by the Java road, by which they had come. The naturalists, too, did not leave the capital of the Preanger Residency without substantial tokens of amity, since a medical gentleman settled there, Dr. I. Ch. Ploem, presented them with a number of interesting specimens, botanical and zoological, and not alone enriched their collections in natural history with many new objects, but also promised in future to maintain an active interchange of objects of scientific interest with the museum of the Empire-city on the Danube.

The journey back to Buitenzorg, despite a tremendous thunder-storm, accompanied by such a shower as is only encountered in the tropics, was nevertheless pretty quickly got over, and even one trifling adventure which was encountered on the way—in the course of which one of the travelling carriages fell into a ditch on one side of the road, near Megamendung, in consequence of which the coachman and attendants were somewhat injured by their sudden precipitation from the box—had no more serious ulterior consequences than

that we had to get out of the carriage for a short space under a deluge of rain, so as to admit of its being more readily put into running order again. Despite the inclemency of the weather we were on this occasion accompanied on horseback by the magistrates of the villages through which we passed, and although many of these were shivering and chattering with the wet and cold, they were nevertheless inexorable in assisting to send us forward, and though not required to do so, accompanied us to our next station, where their place was supplied by others not less attentive.

While still on the road, the commodore and several members of the Expedition received an invitation from the Governor-general to stop at his summer residence of Buitenzorg, and to make it for some days their resting-place. It was unfortunate, that this display of hospitality was somewhat weakened in cordiality by a too rigid observance of those minor matters of etiquette, which his Excellency seemed to think he could not afford to dispense with even in his quiet, unostentatious country-seat. The stringent observance of such unbending measured ceremony is the more remarkable, in the case of a man who has raised himself from an obscure grade of citizenship to this lofty post, and who does not even indulge in that lavish expense or profuse luxury, which would at least be in harmony with the ceremonial usages with which he surrounds himself. M. Van Pahud came to Batavia about twenty years before, as a school-master, and ere long, having become an employé in the civil service,

secured through his administrative capacity, and restless activity, the confidence and sympathies of the Government, was somewhat later appointed Colonial Minister in Holland, and finally, in 1856, Governor-general of the Dutch East Indies. The introduction of the *quinquina* plant from Peru and its present extension throughout Java, are his chief claims to recognition.

As M. Van Pahud is a widower, the honours of his mansion were performed by his daughter, a lady in delicate health, who a few years previously had the distressing trial of beholding her husband, who filled one of the most important posts as Resident at a Regency in the interior, cut down before her eyes by a Malay!

We spent a couple of days in this charming retreat of Buitenzorg, whose botanical garden ever unfolded fresh beauties, and had the pleasure on this, as on the occasion of our first visit, to make several most agreeable acquaintances. A deep interest attaches to our visit to Madame Hartmann, the widow of a former Resident in Borneo, who possesses a small but every way remarkable collection of ethnographic objects illustrative of that island, and who not alone had the thoughtful courtesy to show us all these treasures of natural history, but even presented us with a considerable portion of them. The writer of this account felt himself in an especial degree under obligation to this excellent lady for a number of skeletons of the various races of men inhabiting that island, which it would have been exceedingly

difficult to procure otherwise. There existed but one object in this anthropological collection with which Madame Hartmann would not part: this was the skull of a China-man, who, during the fearful insurrection of these emigrants in Borneo in 1819, made a murderous onslaught on her husband, whose servants fortunately succeeded in rendering timely aid by cutting the miscreant down.

Early on 20th May we quitted Buitenzorg. On the same morning two criminals accused of murder and robbery were brought thither. Although the punishment of death is only inflicted in cases of extreme atrocity, yet we were informed that in the capital scarcely a month passes without the infliction of this last penalty.

On our return to Batavia we once more found ourselves the objects of that charming hospitality, to which we are indebted for the memory of many most agreeable hours.

There was one gentleman in particular, a German countryman, Colonel Von Schierbrand, who has lived nearly thirty years in Java, and at present holds the high position of head of the Engineer department and President of the Topographical Institute, who most hospitably entertained the voyagers of the *Novara* in his elegant, comfortable dwelling, and arranged a variety of amusements and agreeable receptions.*

* Colonel Von Schierbrand, to whom natural science is already under deep obligations for acquiring a variety of valuable objects, is constantly and indefatigably endeavouring, both as a friend of knowledge and a zealous sportsman, to procure, sometimes by personal exertion, sometimes by employing natives engaged at his own expense, a series of rare geological specimens. He appears to be, like so many other

Among these, the gentlemen who took part in it will long have a special recollection of a hunting party, which, owing to the great interest taken by all classes of the community near the seat of action, abounding in antelopes and wild hogs, became ultimately a regular ovation and popular festival. At various points arches covered with leaves were erected, flags fluttered to the breeze on every side, and all along our path the inhabitants, gaily attired, formed a dense array lining the road; while the evening was whiled away in the elegantly furnished mansion of a Chinese, the Mayor of his district, by Javanese dancing-girls, who performed a variety of national dances to the monotonous, lugubrious sound of the gamelong and other musical instruments, after which there was a comedy, the whole winding up with Chinese fire-works on the grandest scale.

Another splendid entertainment was got up in honour of the *Novara* Expedition by the military "Concordia" society, in their large, handsome assembly-room in Weltevreden. The dancing-hall was tastefully fitted up, adorned with blue and green hangings and particoloured flags, while over the entrance was suspended a portrait of our Emperor. In the back-ground of the saloon there was set up in front of a transparency an elegant boat, with an Austrian flag at the gaff, and

of our excellent friends in Java, a living contradiction to the proverb, "Out of sight, out of mind," as he has since the return of the Expedition already sent over as presents to the museums of our native country, valuable selections of curious objects of natural history from the Indian Archipelago.

carrying a cannon crowned with flowers and nautical emblems, all artistically designed and executed. The stewards all wore red and white ribbons round their dress, while the rich attire of the ladies consisted principally of stuffs in the Austrian colours. When the commander of the Expedition entered the saloon with his staff, the band struck up the Austrian National Hymn. The whole festivity went off most agreeably, and the majority of the company, which numbered about 800 guests, kept it up till day-break. Both Dutch and Austrian officers vied with each other in making this a truly fraternal feast. Still as the band played on, there seemed no end to the fun and frolic, and one pair of joyous spirits suddenly bethought them of the droll idea of hauling the cannon "with all its honours thick upon it" through the apartment, with a not less frolicsome comrade sitting astride it, singing and shouting! Unluckily, during this peregrination one of the Dutch officers fell under the wheel, and had his thigh broken near the knee. The unfortunate had to be conveyed to the hospital forthwith, where for weeks he could ruminate upon the consequences of a moment's misplaced revelry. This gentleman, singularly enough, had just retired home and gone to bed, when a couple of his comrades insisted on his accompanying them, amid much cheering and noise, back to the apartment, where the accident happened to him!

One remarkable character in Batavia, whose acquaintance we only made during the latter days of our stay, is Radhen

Saleh, a Javanese of high birth, and princely descent, who, born in 1816 at Djokjokarta in the interior of the island, was at the expense of the Dutch Government brought to Europe when a boy of 14, where he lived for a long time at the Hague, and afterwards in Dresden and Paris, turning his attention chiefly to painting, and who, after 23 years' absence, had returned to Java shortly before our arrival. Raden Saleh, who speaks and writes several European languages with fluency, draws a not inconsiderable sum yearly from the Colonial Government, by way of remuneration for pictures which he is from time to time commissioned to paint for Government House. At the period of our visit the artist was busy engaged in executing for the King of Holland a large oil-painting, representing a stag-hunt on the plain of Mundschul, in the Preanger Regency, at the foot of the Malabar range. The composition, the landscape, the aerial perspective, the attitudes and grouping of the mounted huntsmen, gave evidence of uncommon talent, which unfortunately, however, has not been cultivated to that extent as to enable him to stamp all his performances with the impress of artistic perfection. Radhen Saleh cherishes a warm feeling for Germany, which even his placid, delightful residence among the Eden-like landscapes of his own native land has not been able to weaken. "I owe so much to Germany," he would say to us; "my thoughts and my feelings ever revert to Germany!" It seemed that in his case, as in that of the young negro prince, Aquasie Boachi, of the

Gold Coast, considerations of health were the main reason for his return to the Dutch East Indies.

The last days of our stay at Batavia we devoted to an inspection of various public institutions. First of all we carefully examined the barracks, which present several points of special interest. Major Smits was so kind as to accompany us over the extensive grounds, in which were at the time some 800 men. The soldiers are all volunteers, and consist of about 250 whites, and 600 of the various coloured races of the Malay Archipelago. The white troops sleep in beds, the coloured upon wooden settles covered with mosquito-nets. Each soldier is allowed to have his wife beside him, and it is affirmed that this extraordinary practice tends to make them more orderly and regular, by accustoming them more speedily to life in the barrack, which thus becomes for them a sort of small town! The women for their part prove highly serviceable as cooks, washerwomen, vendors of edibles, &c., and manage a sort of small market for each company, where the soldier can find everything he may require for satisfying his usually very moderate wants.

Major Smits ordered a number of the soldiers, representatives of the most important Malay types, to be submitted to a series of anthropometrical measurements, and made a present to the Expedition of a number of objects of ethnographical interest.

In company with Dr. Steenstra Toussaint, an ardent and

amiable companion, we visited the various prisons, and the Loar-Badang,* of evil repute, which will be discussed in the medical section of the *Novara* publications.

The prisons of Batavia stand in much need of reform, especially as regards construction, management, and treatment. The humane sentiments that characterize our century, have more care even for a robber or murderer than to load him with chains, and make him still more dangerous to society, by lengthened confinement within the thick lofty walls of a prison. There are two categories, into which all criminals in Java are divided, those who during the entire term of their sentence are to remain within the prison, and those who during the day are employed outside the prison on the public works, most of whom wear an iron ring round their neck, or chains on their hands or feet, whence they are usually termed "chain-gang" prisoners.

In the city Bridewell, where the criminals serve their sentences in cells, there is room for 200, and at the time of our visit there were 70 male and two female prisoners in confinement. The disagreeable impression made at finding such an establishment located in an exceedingly unhealthy site, is anything but diminished when the visitor perceives that it consists mainly of a large number of narrow corridors and high

* The Loar-Badang (Public Market) is an immense building, a sort of brothel on a large scale, kept by a Frenchman, who pays a handsome annual sum to Government for the privilege of his infamous traffic. Here, among others, are some 40 or 50 wretched outcasts, whom he sends off in boats every evening to the merchantmen in the port, for the accommodation of their crews!!!

walls running parallel with each other at short distances, between which the prisoners, in divisions of from six to ten, are confined in small cells, two occasionally inhabiting the same cell. Those condemned to imprisonment for debt are shut up in a special compartment, apart from the common run of criminals, but in respect of accommodation and general treatment are in no respect better off than the latter. The law permits the incarceration of a debtor for three years, but the creditor is compelled to pay 10 guilders a month (£10 per annum), to defray the cost of his maintenance. It is illustrative of the Chinese character, and its speculative propensities, that hardly any of that nation are to be found on the criminal side, whereas they furnish the longest quota of those imprisoned for debt. We saw one Javanese woman, who of her own free will submitted to be imprisoned with her husband who had been condemned to several years' incarceration, although she could only communicate with him in the presence of witnesses, and had to live in an entirely different part of the building.

In the prison where the "chain-gangers" were confined, there were 170 prisoners.* Owing to the circumstance that those committed in Batavia are draughted off to the prisons in the interior, while those sentenced in the provinces are sent

* According to official return, the number of criminals, in the year 1857, convicted in the islands of Java and Madura, was 3364, of whom 198 were females and 955 were sentenced to the chain-gang. In the year 1857 alone, 2525 coloured criminals were sentenced to hard labour, with or without chains. The number of convictions in the Dutch East Indies, exclusive of Java and Madura, amounted in the same year to 4430.

to fulfil their sentences in the prisons of Batavia, the stranger encounters in these latter numerous peculiar types of natives from the various districts of Java and the adjoining islands, and this rare opportunity was made use of by myself and Dr. Schwarz to obtain some corporeal measurements of individuals presenting the characteristics of their respective races, as had already been done in the barracks.

Dr. Toussaint presented the Expedition with several pathological preparations, as also with one curiosity rather of historical than scientific interest, namely, the skull of a man, found a few years before in the maw of a shark which had been picked up dead at sea!

A very singular impression was left on us by a visit we paid to "Meester Cornelis," a sort of bazaar in the outskirts of Batavia, where a singular phase of life may be seen nightly in full activity. On a wide open square are a large number of booths, in which are sold all sorts of eatables and drinkables, while there is at the same time no lack of dancing-girls, Javanese musicians, opium-dens, gambling "hells," and other breeding-places of human depravity. The majority of its frequenters are Chinese, who spend here in the most extravagant manner what they have earned during the day. They especially affect the filthy little closets, where for a couple of doits (a halfpenny English) they can lie stretched out in a pitiable state of stupefaction, the result of opium smoking, but are likewise by no means backward in patronizing the gambling booths. A group of these half-naked children of the

Celestial Empire, seated in a circle on the ground amid the flare of torches and lamps, each holding in his lean hand a pair of greasy, well-worn cards, and with a little heap of copper or silver pieces spread out before him, following the chances of the game with a wild eagerness that makes him utterly heedless of what is passing around him, presents a spectacle of such powerful interest, that the beholder, especially if a foreigner, likes to remain amid a scene so peculiar, despite its repulsiveness. The most melancholy consideration perhaps of all is that this form of dissipation seems by no means indigenous to Java, but was first introduced with many other forms of vice under the influence of foreign civilization.

For the observant traveller, a visit to such so-called "places of amusement" possesses a far deeper interest than theatres or operas, which one may see and hear among the various settlements in this Archipelago. Such wandering companies, even those which are as highly remunerated as the "troupes" who minister to the æsthetic tastes of the wealthy inhabitants of the countries beyond sea,* or rather to an indispensable fashion, must awaken among European visitors melancholy reminiscences of vanished triumphs of art. Thus Batavia, during our stay, could boast a French operatic company. The theatre, lofty and airy, though of but one storey, without either boxes or gallery, had far more the

* Thus the "Prima donna" receives for tragic opera 1500 guilders (£125), and for comic opera 1800 guilders (£150) per month during the season. The "troupe" is usually engaged for a year and a half or two years together.

appearance of a concert-room than a regular theatre. The rather heavy cost was defrayed by lotteries, which were set on foot by the Colonial Government from time to time for the behoof of the funds of the theatre. Several of the "cantatrices" carry on simultaneously with their engagements a lucrative business in French articles for the toilette, while the men-singers give instruction in vocalization, by which they not merely eke out their living, but contribute handsomely to the annoyance of their next-door neighbours.

There is but little sociability in Batavia. The people live in a thoroughly retired manner, each usually receiving only a small circle of friends in his own house. On this point, as on many others, our *own* experience is *directly contrary* to the actual state of matters, seeing that during our entire stay one invitation followed on the heels of another;—but those who live here for years together, even under the most favourable auspices, have repeatedly assured us that life in Batavia is unsociable and tedious.

This is the misfortune of all countries "beyond sea," where Europeans do not settle permanently, but flock thither with the intention, after a certain number of years of industry and activity, of returning home with a fortune made by their own personal exertions. We see this in Brazil, in the West Indies, in the Western coast of South America; in a word, in all tropical or sub-tropical countries where, on account of climatic considerations, the greater part of the European population is changed every ten years, and is

recruited by fresh arrivals from Europe. How out of place, accordingly, does social or intellectual life appear in such countries, as compared with the colonies settled in temperate climates, in North America, at the Cape, in Australia, in New Zealand, in all of which the immigrant population is of a fixed character, building up for themselves a second home, and clinging with love and gratitude to the soil that gives them sustenance, and on which their sons will grow up, under the invigorating influences of free institutions, into free, prosperous, self-relying men!

Even in Batavia the majority of the European residents change every eight or ten years; instances such as that of Colonel von Schierbrand, of men who during 30 years have never once left the island, never yet seen a railroad, being of rare occurrence.

Of the numerous friends whom we were so fortunate as to make during our stay in Java, and to whom such heart-felt thanks are due for their hospitality and the warm interest they took in the objects of our Expedition,* many have since left the island for ever, and by their return to Europe left many a lamentable vacancy.† The more deserving

* Of these we cannot refrain from mentioning Dr. Van den Broek, who shortly before our arrival had returned from Japan, where he had resided seven years as physician and Government agent. Dr. Van den Broek, who is at present engaged in the editing a dictionary of the Dutch and Japanese languages, presented us with a botanical work in Japanese with numerous wood-cuts, and at the same time was so exceedingly kind as to present us with a small vocabulary of the Court and the popular dialects used in Japan.

† Among scientific circles in Batavia the recent departure of the renowned ichthyologist, Dr. Bleeker, who intends to settle in Holland or Germany, will be the

of acknowledgment is the constant endeavour of the present Colonial Government to attract to itself fresh intelligence, and so not alone stimulate the scientific activity of the present, but also provide for the filling up of the various posts by properly qualified persons. The magnificent and expensive works which have been published of late years in Java by men of science, are the splendid fruit of that noble-minded support, and it is much to be regretted that the Government does not extend this liberality to their *political* system,—that despite the glorious example in their own immediate neighbourhood of the results of English Free Trade, Government still cramps the energies of the colony with monopolies and privileges, and thereby checks the development of a country, which, alike by its position and its manifold natural advantages, bids fair to be one of the wealthiest and most prosperous countries in the world.

At seven A.M. on the 29th May, the *Novara* weighed anchor in the roads of Batavia, after a stay of 23 days. Our next visit was to be paid to the Philippine Archipelago,—to the flourishing island of Luzon, or rather to Manila, the most important settlement in the entire group. This was the pleasantest trip throughout the whole voyage. The distance, some 1800 nautical miles, was achieved in 17 days, with delightful weather, and balmy south-west monsoons.* By the

more appreciated, that this resolve will be regarded by his numerous European friends as a satisfactory assurance that the valuable materials relating to natural history which he has collected will ere long make their appearance in a suitable form.

* Voyagers between Batavia and Manila must not, however, always expect to

14th June we were in sight of the coast of Luzon, and on the following day we ran on before the freshening monsoon into the broad, beautiful gulf of Manila. As we passed between the rock La Monja (the Nun) and "El Corregidor," or Governor's Island, which lie right in the channel, we met the *Cleopatra*, a large English screw-steamer, which had a freight of 1150 Chinese, who were to be imported into the Havanna as so-called "free" labourers. These poor wretches came from Amoy, and, as we afterwards learned, had been put on board so scantily provided, and so little cared for by the authorities, that thus early, during the voyage from Amoy to Manila, only 700 miles, eleven of these "passengers" had died, and the captain found himself compelled to bear up for the nearest harbour in consequence of a sort of malignant fever having broken out on board, so virulent that there were deaths occurring almost every day. We shall treat more particularly of this hideous trade in men, which is chiefly carried on by the Portuguese, when describing our visit to Macao.

The Bay of Manila is a beautiful land-locked basin, of such splendid proportions that when we had passed Governor's Island the city of Manila was still below the horizon. We anchored on the afternoon of 18th June in the harbour of Cavite (seven nautical miles south of Manila), because during

make so rapid a voyage. In Manila we fell in with a ship-captain, who had left Batavia in April, and, owing to the prevalence of calms and contrary winds, had been 59 days on the passage!

the S.W. monsoon this harbour is more sheltered, and therefore safer for ships, than the shallow open roadstead of the capital. Cavite, which boasts a fort, an arsenal, a dock-yard, and a cigar manufactory, lies on a low, narrow tongue of land projecting into the bay. Whoever may have first set foot at Cavite, on the soil of the Island of Luzon, so renowned for its natural magnificence of scenery, must involuntarily feel that his anticipations have been sorely disappointed; he will with all possible diligence make the best of his way from the glaring white sands and black walls of the fortress here to Manila, the next object of our hopes. A small screw plies daily between Cavite and the last-named city, and this vessel also conveyed the Expeditionists from Cavite to the capital of the Philippine Archipelago.

XIII

Manila.

STAY FROM 15TH TO 25TH JUNE, 1858.

Historical notes relating to the Philippines.—From Cavite to Manila.—The river Pasig.—First impressions of the city.—Its inhabitants.—Tagales and Negritoes.—Preponderating influence of Monks.—Visit to the four chief monasteries.—Conversation with an Augustine Monk.—Grammars and Dictionaries of the idioms chiefly in use in Manila.—Reception by the Governor-general of the Philippines.—Monument in honour of Magelhaëns.—The "Calzada."—Cock-fighting.—"Fiestas Reales."—Causes of the languid trade with Europe hitherto.—Visit to the Cigar-manufactories.—Tobacco cultivation in Luzon and at the Havanna.—Abáca, or Manila hemp.—Excursion to the "Laguna de Bay."—A row on the river Pasig.—The village of Patero.—Wild-duck breeding.—Sail on the Lagoon.—Plans for canalization.—Arrival at Los Banos.—Canoe-trip on the "enchanted sea."—Alligators.—Kalong Bats.—Gobernador and Gobernadorcillo.—The Poll-tax.—A hunt in the swamps of Calamba.—Padre Lorenzo.—Return to Manila.—The "Pebete."—The military Library.—The civil and military Hospital.—Ecclesiastical processions.—Ave Maria.—Tagalian merriness.—Condiman.—Lunatic Asylum.—Gigantic serpent thirty-two years old.—Departure.—Chinese pilots.—First glimpse of the coasts of the Celestial Empire.—The Lemmas Channel.—Arrival in Hong-kong Harbour.

LUZON, or Manila, the largest and most important island, politically speaking, of the Philippine Archipelago, is the sole possession of the Spanish Crown which was visited by the

Novara during her numerous traverses and diagonal tracks on her voyage round the world. As we had hitherto come into contact for the most part with the Anglo-Saxon race and its colonies, it was naturally doubly interesting to have an opportunity of becoming likewise acquainted with the results of civilization and colonization as exemplified by what are called the Romaic or Latin branches of the great Caucasian family, and by personal examination to satisfy ourselves in what fashion the Castilians have succeeded in identifying their own advantages with those of the natives of these islands. True it is, that the history of the earlier Spanish dependencies is by no means calculated to heighten our regard for the wisdom and mildness of the colonial policy of Spain, or to give a particularly favourable impression of the political and social condition of the Philippine Islands. A state, whose power at the commencement of the present century was still beaming in all its lustre, who has lost the fairest and most fertile lands on the face of the earth, which it had possessed for above three hundred years, without the slightest attempt to defend them, whose Government, through its inflexible adherence to obsolete forms and ordinances, after the dizzy pre-eminence of ruling the world has dwindled into a power of the third class,—leaves nothing to hope that any part of its organization should have remained intact, that the canker in its political and social proclivities, which so suddenly and so disastrously brought about the downfal

of one of the mightiest and most extended empires in the world, should not likewise have made its appearance in the Philippines. However, it is precisely these considerations which make the contrast between the colonies founded by the Anglo-Saxon race in remote regions of the globe, and those of the Spanish, Portuguese, Dutch, and so forth, so valuable and instructive, although a rigid analysis of the causes which have conduced to the present condition of the majority of the countries conquered and ruled by races of Latin origin, must necessarily impress the unprejudiced inquirer in a sense little flattering to these latter, namely, that the history of every quarter of the globe would have assumed an entirely different aspect had these countries been first discovered and colonized by the Anglo-Saxon race, with its watchwords of freedom and religious toleration, instead of the Spaniard or Portuguese, with tyranny and fanaticism inscribed on its banners.

The Archipelago of the Philippines comprises those numerous islands and islets between the parallels of 5° and 21° N., and which are scattered between the North Pacific Ocean on the east and the Chinese Sea on the west. The entire group, which, according to the Spanish account, consists of not fewer than 408 islands, extends over 16° of latitude by 9° of longitude, covering a superficial area of 91,000 square miles, or about the dimensions of England, Ireland, and Wales, exclusive of Scotland. Only two islands however of the whole cluster are

of considerable dimensions, viz. Luzon, or Manila, which is about the same size as Galicia, Moravia, and Silesia taken together, and Mindanao, which, in superficial area, is about equal to Styria, Carinthia, and Carniola.

As in size, so in fertility, natural advantages, and commerce, Luzon is the most important island in the Archipelago, as it is likewise one of the most delightful spots in the tropics. The climate is adapted to the cultivation of all the plants and various forms of vegetation alike of the torrid and the temperate zones. On the coast the thermometer never falls below 71°.6 Fahr., nor rises above 95° Fahr. In the highland valley of Banjanao, 6000 feet above the level of the sea, albeit not above 36 miles distant from Manila, the thermometer frequently descends as low as 44°.6 Fahr. The highest register of the thermometer is during the rainy months,* from May to September; but we were assured over and over again that in Manila the heat is very equably distributed over the entire year, and never attains such a high degree as many summer days in Madrid. The most valuable and most extensively used plants of the tropical and sub-tropical zones, such as sugar, coffee, cocoa, cotton, bananas, maize, tobacco, and rice, flourish here. The forests abound in all the most valuable descriptions of cabinet-wood, but the narrow-minded illiberality that has always characterized the colonial policy

* In Manila the minimum annual rain-fall is 84 inches, the maximum 102 inches.

of Spain, the numberless restrictions to which her commerce is subjected, do not admit of that magnificent development of which this insular cluster, so abounding in natural wealth, would be susceptible under a more free-souled rule. The Spaniards have conquered and have subjugated the islands, fanatical monks have what they call Christianized the people, but, during the three hundred years that the Castilian has held the supremacy here, little if anything has been done for the prosperity and development of the country, or the intellectual and moral advancement of the people.

The Philippine Islands were discovered by Magelhaens and Pigafetta on the 17th March, 1521, nearly twenty-nine years after the discovery of America by Columbus, and two years after the conquest of Mexico by Fernando Cortez. In consonance with the religious customs of that age, the group was named by Magelhaens "The Archipelago of St. Lazarus," because the day on which it was discovered corresponded with the fête-day of that saint in the calendar. But the discovery did not imply the conquest of the Archipelago. Four expeditions were dispatched at various intervals, without their succeeding in subduing the natives. The solitary result obtained thence was, that the commander of the fourth expedition, that of 1542, Don Ruy Lopez de Villalobos by name, changed the Scriptural name of the Archipelago for that by which it is at present known, in honour of the prince of Asturias (then 15 years old), afterwards Philip II.

It was not till a fifth expedition had started in 1565, forty-one years after the first discovery of the Archipelago by Magelhaens, that the conquest was finally completed. The leader of this was Miguel Lopez de Legaspi, a man noways inferior to a Cortez or a Pizarro in venturesomeness of spirit, inflexible perseverance, and brilliant courage, and in humanity far exceeding either. His squadron consisted of five ships, and his entire force, including soldiers and mariners, was but 400 men.

On 21st November, 1564, Legaspi sailed from Port Natividad in Spain, and on 16th February, 1565, hove in sight of the Philippines. The hardy navigator was accompanied by a number of Augustinian monks, who in the subsequent subjugation of the islands proved far more serviceable than his soldiers. The superior of these monks, Fray Andres de Urdañeta, a very remarkable man, had commanded a ship in the first expedition, and had afterwards been admitted into the order of St. Augustine.

Four years after their arrival at the Philippines, and after they had subdued the native inhabitants of the fertile islands of Cebu and Panay, Legaspi first discovered Luzon, and there in the year 1571 founded the city of Manila. Since this first conquest the Spaniards have by no means been permitted to retain undisturbed possession of this smiling cluster of islands. Not alone the Portuguese and the Dutch bestirred themselves at various intervals to drive the Spaniards out of the Archipelago, but the English likewise, in 1762,

towards the close of the Seven Years' War, invaded these settlements.*

The area conquered, however, did not extend further inland than to a distance of ten miles from the walls of the city, and after an occupation of ten months, Manila was restored to the Crown of Spain by the Peace of Paris, 1763. Since that memorable period, the Philippine group has remained uninterruptedly under the dominion of the Spaniards, and has up to the present day been a faithful dependent of the Royal House of Castile. In fact, with the exception of Cuba and Porto Rico, the Philippine and Marianne Archipelagoes are the sole colonies that Spain still retains of her once so enormous possessions in the distant portions of the globe, although in Manila even in our own day, as will be more fully detailed presently, despite her honourable distinction of "*La Siempre real ciudad*" (The Ever Loyal city), there is no lack of discontent, and the generally prevailing "loyal tranquillity" is, none the less, boding many serious perils for the Spanish supremacy.

The most striking peculiarity of the natural configuration

* The expedition sailed from Madras with about 2300 men; the squadron consisted of 13 ships of war and transports. The English landed without any opposition, laid siege to Manila, stormed and captured the city proper within ten days after their arrival. The Citadel capitulated; the Governor, an Archbishop, binding himself to pay a contribution of 4,000,000 dollars (£833,000), in order to save the city from being sacked. This expedition was always looked on by the Spaniards of the Philippines as a very rash adventure, which by no means tended to diminish the national antipathy to the English race, although after such freebooting expeditions as have within these last two years been witnessed on the part of civilized states in law-abiding Europe, this invasion by an army of declared enemies must be viewed in an entirely different light.

of Luzon* is its strongly-marked separation into two peninsulas, a northern, which comprises the larger portion, and a southern, smaller island; the former named Luzon by the Spanish, the latter Camarinas. The length of the entire island, including its numerous curves, is about 550 miles, and its greatest width about 135 miles, but in many places it is little more than thirty miles in breadth. The chain of the Caraballos mountains traverse Luzon from north to south, and sends off spurs in various directions, which impart an exceeding hilly aspect to the entire island.

The Spaniards divide Luzon into three main divisions; Costa, Contra-Costa, and Centro, corresponding pretty nearly with the western side, the eastern side, and the interior of the island, and formerly indicating in what order these different sections of the country had been subjected to the Spanish dominion. The latest distribution is into 35 provinces and 12 districts.

Manila, the capital of Luzon, as also of the whole Archipelago, and the oldest European settlement in this region of the globe, lies at the mouth of a small but rather rapid river, the Pasig, which after a course of about 30 miles, draws off to the sea the waters of the great Bay-Lake (*Laguna de Bay*). In

* Spanish writers, treating of the Philippines, derive this name from "Losong," which in the native language means the wooden mortar in which the rice, which forms the chief subsistence of the inhabitants, is shelled and pounded. The first strangers who came to this island, and found in every hut one of these very peculiar clumsy-looking implements, spoke of the newly discovered island as "Isle de los Losenes" (island of wooden mortars), whence in process of time it became transformed into Luzon.

consequence of a not very conveniently situated mole, the Pasig is forming a bar close to its own embouchure, which makes it somewhat dangerous for boats to attempt an entrance in bad weather. Ships, however, can anchor about $1\frac{1}{2}$ miles below the fortified walls of the city, which, though impregnable to the attack of a native force, would probably be found powerless to repel a European force attacking from seaward.

The members of the Scientific Commission started from Cavite, where the frigate lay at anchor, in the small steamer which plies daily to the capital, which, when beheld from a distance, with its gloomy, lofty, defiant fortifications, and its dense clusters of monastic buildings and church towers, gives the impression rather of some great Catholic Mission than a place of commerce. In the roads there were not above 16 ships lying at anchor, whereas we counted 165 in Singapore, a disproportion which, considering the favourable site of Manila and its wealth in all manner of valuable produce, can only be accounted for by the pressure of political and administrative regulations, which weigh like a mountain upon trade and commerce.

On pulling up the river from its mouth, where it is about 300 feet wide, we find ourselves in the vicinity of the lighthouse, in front of a dense mass of the inevitable filthy bamboo huts, which being inhabited by the very poorest section of the population, increase the dismal, gloomy impression left by the first view of the city. We land in the neighbourhood of the

harbour-master's office, and have to pick our steps through a dirty quarter of the town in order to reach the focus of public activity.

The river Pasig divides Manila Proper from its sister city of Binondo. Two handsome bridges, one an old-fashioned stone one, the other a modern suspension bridge of imposing dimensions, form the communication between the two cities. Manila, situate on the southern or left bank, and enclosed on all sides with ditches and fortifications, has all the peculiar features of a Spanish town of the ancient type. It consists of eight straight, narrow streets, all running in one direction. Within these are most of the public buildings; the Governor-general's Palace and that of the Archbishop, the Municipality, the Supreme Courts, the Cathedral, the Arsenal, the Barracks. Profound silence reigns in the grass-grown streets, between the gloomy masses of stone, of which at least one-third are Church property. There is no evidence anywhere of joyous life or social progress, and the variegated, charming flower-garden, lately laid out in the square in front of the Cathedral, stands out like a solitary gay picture, amid austere, sombre, historical paintings of vanished might and faded splendour. Within the walls of this melancholy old city only Spaniards and their descendants may dwell, all other races being excluded from this privilege. The number of inhabitants within the fortifications does not probably exceed 10,000 souls.

On the other hand, Binondo, on the northern or right bank of the river, is the true business city and head-quarters of

trade. Here Europeans, Chinese, Malays, and their endless intermixtures of blood, amounting in all to more than 140,000 souls, reside in the most perfect harmony with each other; here are all the warehouses, shops, and manufactories; here prevails from morning till night a perpetual whirl of busy, cheerful crowds circulating through the streets, of which that called the Escolta is the most frequented, as it is the handsomest and most attractive. The houses, on account of the frequency of earthquakes, are usually one storey high, enclosing large courts (*patios*), and very frequently with a sort of terrace on the roof. The interiors of the houses have an unusually spacious appearance, owing to their almost universally having but little furniture, in many cases simply a number of chairs ranged along the walls. But the most singular aspect of these houses is to be found in the windows, the panes of most of them being made, not of glass, but of the shell of a species of oyster (*Placuna Placenta*), ground down to the requisite thinness! The subdued light which is thus obtained is exceedingly grateful, and these mussel shells have been found to be cheaper and more lasting than panes of glass, which, in a country so frequently visited by earthquakes and hurricanes, could only be replaced when injured at an immense expense. The streets are rather narrow, so much so that linen awnings are stretched across the streets from one row of shops to that opposite, thus securing to the foot-passenger the inestimable boon of being able during the hottest hours of the day to traverse almost every street in Binondo under shade.

That which the stranger understands by the emphatic word "comfort" is only to be found in the houses of European residents, and is not obtainable by money. The two hotels lately started levy, unchallenged, Californian prices for even the most moderate requirements, and so far as cleanliness and orderliness are concerned, lag far behind the commonest country inn in North America or the British colonies.*

Despite the various races that meet the stranger's gaze, Manila has, beyond any other colony in the East, the appearance of a European town. One remarks here, that the colonists are more completely amalgamated with the natives, and that with the religion these latter have also adopted a considerable proportion of the customs of Europeans.

Among the populace of Manila belonging to the coloured races, that most prevalent in the capital is the Tagal, or Tagalag, on whose territory the Spaniards founded their first settlement. The obscurity that envelopes their origin has never been dispelled, although some of the older religious writers thought they found on Borneo and other islands of the Sunda Archipelago some traces of their stock. They were confirmed in this impression by the fact, that in the

* One of these hotels, the Hotel Français, was, at the time of our visit, kept by a Frenchman named Dubosse, a man of a most adventurous disposition, who afterwards accompanied the French army to China as a mess-man, and was one of the victims seized by Sang-ko-lin-sin's soldiers, near Pekin, in September, 1860, who met with such a horrible fate. The other inn, the Hotel Fernando, kept by a North American, is yet more filthy and noisy than the first-named, since, being situated on the harbour, it serves for a rendezvous for the various ships' captains. In neither of these is the charge less than 4 to 5 Spanish dollars a day, or about £1 sterling.

most cultivated dialects and idioms of the Tagal is to be found an unusually great number of Malay and Javanese words. The majority of the plants cultivated here, such as rice, sugar-cane, yam, indigo, cocoa-palm, as also all domestic animals, many of the metals, and even the digits used in enumeration, are, although greatly corrupted, directly traceable to the corresponding words or names in Malay. Moreover, there is a tradition very prevalent throughout Luzon, that the Spaniards, at their first arrival in this Archipelago, found certain Bornese officials here, who were levying taxes and tithes for the Rajahs resident in that island.

Next in number to the Tagals rank the Chinese with their descendants, and to these succeed the Spaniards, with their offspring born in the country, who amount together to barely 5000, or about a 28th of the whole population of the capital; of Spaniards of pure descent, there are not above 300 in Manila.*

Besides the Tagal there is in this Archipelago yet another race, the *Negritos*, who only inhabit the mountain districts of the islands of Luzon, Mindoro, Panay, Negros, and Mindanão, and are estimated at about 25,000 souls. These Negritos del Monte, or Negrillos, also called Aeta, Aigta, Ite, Inapta, and Igorote, are small in physical conformation as compared with their African congeners. The characteristic features of

* The Stranger's Guide to the Philippines (*Guia de Forasteros*) for the year 1859 gives the names of 61 commercial houses established by Spaniards in Manila. Besides these, there are in the capital of the Philippines, seven English, three North American, two French, one German, and two Swiss trading firms.

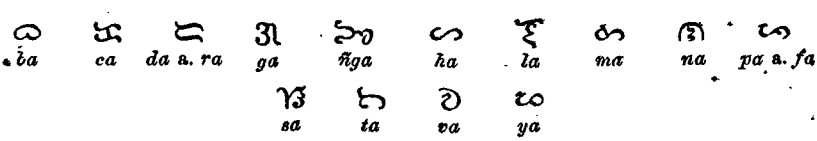
the negro are less strongly marked, the colour of their skin and their complexion are both less black. For this reason old Spanish authors speak of them as "*menos negro y menos feo*" (less negro-like and less hideous). Owing to their small stature, which does not average above 4 feet 8 inches English, they have received the appellation of Negritos (diminutive Negroes). By Spanish writers upon the Philippines they have been described as a still existent branch of the lowest type of humanity, without fixed dwellings, without regular employment, eking out a bare subsistence on roots and wild fruits, and such animals as they could bring down with the bow and arrow, their only weapon. Through the kind offices of Mr. Grahame, we had an opportunity of gratifying our curiosity to see an individual of this singular race of Negritos. This was a girl of about 12 or 14 years of age, of dwarf-like figure, with woolly hair, broad nostrils, but without the dark skin and wide everted lips which characterize the negro type. This pleasing-looking, symmetrically formed girl had been brought up in the house of a Spaniard, apparently with the pious object of rescuing her soul from heathenism. The poor little Negrilla hardly understood her own mother tongue, besides a very little Tagal, so that we had considerable difficulty in understanding each other. The received opinion that the Negrillos and the Igorotes are of a distinct race, but having some affinity with the Papuans of New Guinea, seems to us for many reasons very problematical. We are as yet far too little acquainted with the races

inhabiting the most inaccessible parts of the island, to be able to pronounce a correct opinion upon such a point. The probabilities are not less that the Negritos and Igorotes stand in the same relation to the dwellers on the coast as the Bushmen to the Hottentots, the Weddahs to the Cingalese, or the savages of Sambalong to the natives of the rest of the Nicobars.

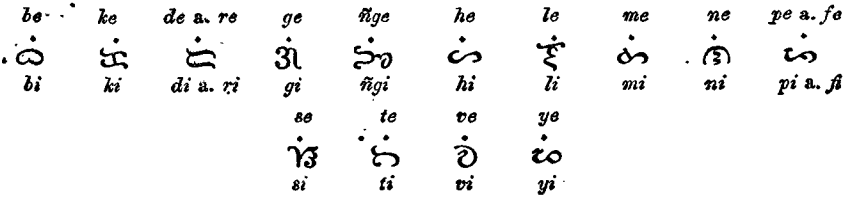
The Spanish language is only available in Manila and the vicinity;—a few miles in the interior, even in places which hold almost daily communication with Manila, Tagal is much more commonly used. At present Tagal is written and printed exclusively in the Roman character. While in Manila, we never once saw a book or MS. in which the ancient character had been used. Even the oldest printed matter, such as, for instance, a Tagal grammar, published in Manila in 1610, contains only a few samples of the native alphabet, while as to its original arrangement, as also the form of the numerals, the utmost uncertainty prevails. The entire alphabet, which, including the three vowels, consists of but 17 letters, comprises the following characters:

Vowels.

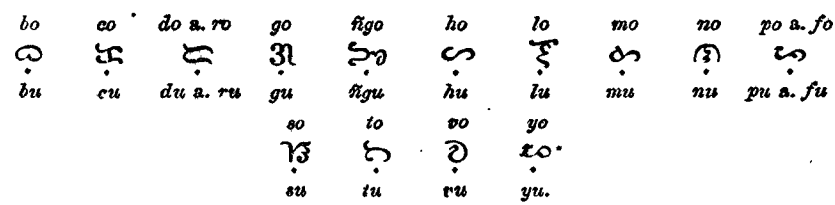
Consonants.



A dot *above* the character changes the vowel sound *a* of the original consonants into *e* and *i*.



A dot *below* the character changes the vowel sound *a* of the original consonant into *o* and *u*.



From the foregoing characters it would appear that *a* and *o*, as also *e* and *i*, *da* and *ra*, *pa* and *fa*, had each but one and the same character.*—Besides the Tagal, five other different idioms are used by the civilized races of Luzon, namely, Bisaya, Pangasinana (the same as Ilocano), Tbanac (same as Cagayana), Bicol, and Pampanya.

The Tagals are a small race, of a clear yellow complexion, and, notwithstanding their broad flat noses and thick lips, are by no means of unpleasing appearance. The hair of the head is rigid, bristly, and black; the beard very sparse.

* We borrow this alphabet from the valuable work of Baron von Hügel, entitled the Pacific Ocean and the Spanish Colonies of the Indian Archipelago (Vienna, printed at the Imperial Press, 1860), and believe the reader will the more gratefully welcome it that only a small number of copies of Baron von Hügel's interesting journal were printed in manuscript for private circulation.

They all wear European clothes more or less, although the fashion in which they wear them is quite peculiar and ludicrously odd. Not merely do the lower orders and servants wear the shirt ironed perfectly smooth and unwrinkled, instead of a coat, above their continuations, but the Tagal dandy prides himself on his well-lacquered boots, his white stockings, his new Paris silk hat worn with a jaunty cock to one side, and above all his carefully plaited resplendent white shirt, as he struts through the streets of Manila, cigaret in his mouth, and swinging an elegant little cane! The women wear, like the Javanese women, the "Sarong," a parti-coloured striped cotton dress, rolled round the loins, and a close-fitting very short jacket, so short indeed that between it and the gown a space about an inch wide intervenes through which the naked body is visible, while the fine transparent gauze-like stuff of which the jacket is made is much better calculated to show off than to conceal their attractions. This universal fashion of dress is the more surprising, as the various orders of monks exercise in all other respects an almost despotic control over the natives, and as it is much more attributable to their influence than to that of the secular authorities that the speech, manners, and customs of old Castile have taken firm and extensive root in the Philippines. It seems, however, unjust to compare this group of islands, as has been done by modern writers, on account of the all-pervading influence of the Spanish element, with a province of Spain, in contradistinction to the colonies

of other nations, where the Europeans have always been regarded by the natives as the lords of a conquered country. The English in India, Ceylon, and New Zealand, and the Dutch in Java, all appear to have a much firmer and more secure footing than the Spaniards, despite their having mingled with the people. How little can be effected by forced amalgamation of speech and manners, is best illustrated by the late separation of Central and Southern America from the Spanish rule, although in most of these countries the majority of the people speak only Spanish, and are governed entirely in accordance with Spanish customs. Much better founded seems to us the observation that it was less the sword than the cross of Spain which brought the Philippines under the throne of Castile, and that the natives have become Spanish Christians, without being Spanish subjects. The entire Archipelago is nothing but one rich church domain, a safe retreat for the legion of Spanish monks, who are able to lord it here with unrestrained power. There is a Governor-general of the Philippines only so long as it pleases the Augustinian, Dominican, and Franciscan friars; and if ever an insurrection breaks out in the Archipelago, designed to shake off the Spanish yoke, there will be more than one monk to head the movement.

In a country where the cloister and its denizens interfere so arbitrarily in all the concerns of life, and impart to the capital itself, as indeed to the entire Archipelago, a character entirely peculiar to itself, religious establishments and their

zealous occupants call for special consideration, and the reader need assuredly feel no surprise that we should begin the narrative of our visit to the capital of the Philippines by a description of its monasteries. In Manila these unfortunately are not, as they were in the middle ages, the nurseries of culture and civilization, of science and art, but rather give the impression of being simply huge establishments for the maintenance of zealous souls, weary of life, who wish to close their days of labour in tranquil contemplation, exempt from all anxiety.

The four orders of monks to whose hands are confided the entire spiritual and very much of the secular well-being of the inhabitants of the Philippines, are the Augustines (*Agustinos Calzados*—sandalled friars), the Franciscans, the Dominicans, and the barefoot Augustinian mendicants (*Agustinos descalzados* or *Recoletos*).

The monastery of the Bare-Foot Friars, lying close to the wall of the fortifications, consists of a number of spacious buildings, some of which date from the 17th century. Everything here tells of former power and splendour. From the billiard-room and parlour on the first storey, the eye is charmed by a marvellous landscape commanding the Bay of Manila and the mountains that surround it. How delightful must it be in the evening twilight to pace these airy chambers in the society of congenial souls, and, while the brow is fanned by the cool sea-breeze, to give free scope to the reins of fancy, as it swept far away over the Bay of Manila!

For what privations must not such a source of pure exquisite enjoyment indemnify the ascetic brethren of the cloister! That spiritual meditation and converse however do not form the sole topics discussed in these departments, was abundantly evidenced by the hints let fall by several of the monks who conducted us through the various corridors and apartments, and who were constantly indulging in visions of Carlist supremacy and a return of the halcyon days of monasticism. On our remarking that so far as worldly consideration was concerned, the cloister enjoyed far more cordial support in Manila than either in Spain or Cuba, one of the Augustinians who was accompanying us, a tall commanding figure, attired in the plain garb of the order, replied: "The Government knows that it has need of us, that it could not get on a day without us, therefore it leaves us in peace, and places no impediments in our path as in Spain."* And he was right. Whensoever the monks lift the finger, Spain has ceased to rule in the Philippines. The spiritual reins have ever bridled the secular authority, and such a state of things is the severest impediment to the development of the country and its intellectual growth.

* This opinion of our Augustinian guide is not shared out there. An Austrian traveller, as widely renowned as highly cultivated, Baron Von Hügel, relates, in his Diary already alluded to, the following singular revelations by a friar in Manila: "The Philippine Islands belong to the Augustine monks; in Manila, Don Pasquale (the then Governor) or another may ruffle it and talk large,—in the interior *we* are the true masters. Tell me where you want to go and everything shall be laid open for you! . . . . . Police in the interior? It is laughable to hear of such an idea! As if such were possible! and I should be glad to make the ac-

Of the various monastic orders resident in Manila the Augustinians are by far the best educated. They have made the various dialects of the native races their study far more deeply than the other orders. The "*Flora de las Filipinas*," the *only* botanical work which has ever been published in the Spanish language, treating of this interesting Archipelago, was compiled by an Augustinian monk, Fray Manuel Blanco.*

The number of monks resident in the monastery of Manila when we were there was 48, but there was room enough for three times as many. Altogether there were of the Augustinian order 58 monasteries and parishes in the island of Luzon, extending from one end of the island to the other. In the entire Archipelago there are, according to public documents, 145 Augustinian monks, whose authority extends over 14 provinces and 153 villages, numbering 1,615,051 souls.†

quaintance of that official who would venture to ask even the simple question of who any man is, who is under the protection of our order! . . . Should you like to ascend the Majay-jay, the highest hill in the interior? An Augustinian friar shall accompany you thither. Should you care to make an excursion to the Lagoons and thence proceed to the Pacific Ocean? An Augustinian friar shall be your guide. Have you a hankering to visit the forests of Ilocos, northward from Manila, or to sail down the great river Lanatin? An Augustinian shall arrange all that for you. In one word, say what you wish to do!"

* Fray Manuel Blanco, whose portrait, the size of life, but by no means artistically executed, adorns one of the corridors, was born 24th November, 1778, at Naviaños, in the province of Zamora in Spain, and died in the convent of Manila 1st April, 1845.

† Of these there were in 1857, 373,569 liable to taxation. Within the same year there were 85,629 persons baptized, 16,768 married, and 49,999 buried with the rites of the Church.

The monastery of the Dominicans is kept clean and comfortable; and its wide spacious apartments leave a less vivid impression of decay and human indifference than the majority of the monastic edifices. Here also the lofty, light chambers in the upper storeys command a magnificent prospect. The Prior, Padre Vellinchon, received the Austrian travellers with much cordiality, and conducted them in person round all the apartments of the very extensive building. He spoke Latin pretty fluently, and without the peculiar Spanish accent, besides possessing a slight acquaintance with French; and was somewhat better informed upon European matters than his spiritual *confrères*. The library of the order is not kept in the convent, but in one of the buildings of the University of St. Thomas also used by the Dominicans, but it is quite unimportant, whether as regards the number of works it contains or their scientific value.

The spiritual jurisdiction of the Dominicans extends over eight provinces of the Archipelago, including 76 villages, with in all 427,593 souls, whose eternal interests are watched over by 76 brethren of the order.*

A Dominican friar, Joaquin Fonseca, is president of the permanent commission of Censorship of Books, consisting in all of nine members, five of whom are nominated by Government and four by the Archbishop of Manila.† We had the

* In 1857 there were baptized in these 76 villages 21,604 children, 4512 couples were united in wedlock, and 12,002 were buried.

† In the entire Archipelago there is but *one* newspaper, "El Boletin Oficial,"

pleasure of being made acquainted with Fray Joaquin Fonseca, who also holds the appointment of Professor of Theology in the University of St. Thomas, and were presented by him with a copy of an imperfect epic poem composed in Spanish, which had for subject the history of the island of Luzon and its inhabitants.* Of this interesting fragment we shall publish a translation in another place.

Just as we were leaving the Dominican monastery, its worthy Prior begged our acceptance, by way of souvenir of our visit, of a copy of Dante's Divina Commedia in the original text, and a dictionary of the Ybanác, one of the idioms most extensively used throughout the Archipelago.

The monastery of the Franciscans presents no other feature of interest, than in so far as it is an emblem of the melancholy spiritual decay in which the members of this order at present find themselves in Manila. The dirt and untidiness which were not merely apparent in the various apartments, but which were even but too obvious in the external appearance of the brothers of the order, make a most disagreeable impression; for poverty and necessity, these two cardinal principles of the mendicant orders, are by no means incompatible with cleanliness and neatness.

The Franciscans possess 16 missions in 14 of the provinces,

published under the auspices of Government, and which treats much more of religious than of political topics. There are but two printing and publishing houses in Manila, one of which is in the hands of the Dominicans, and prints almost exclusively Prayer-books and religious works.

* This historical poem is entitled "*Luzonia, ò sea Los Genios del Pasig.*"

comprising 159 villages and 749,804 inhabitants.* The spiritual instruction of these is intrusted to 184 brethren of the order, 74 priests, and 43 *Clerigos Interinos* (occasional preachers).

The monastery of the *Recoletos*, or Reformed Augustinians, offers a not less impressive prospect than that of the Franciscans. Here, too, the occupants permit to appear a careless indifference utterly destructive of the value of their ghostly ministration. As we entered, the brethren of the order had finished their mid-day repast. Some of the monks were still sitting in a dirty, gloomy verandah round a table on which was spread a table-cloth stained with food and drink, while in front of each stood a half-empty wine-glass. A lay brother announced us, upon which one of the monks rose to bid us welcome. From his rather jovial appearance, and the suspicious colour of his nose, we presumed he was the cellarer, and were not a little surprised when, in the course of conversation, he announced that it was the Prior himself who was speaking with us.

We had the utmost difficulty in making the brethren, whose information was of a most limited extent, comprehend from what country we came. The circumstance that the original German name *Oesterreich* is pronounced Austria in Spanish, puzzled still more hopelessly the comprehension of

* Of this number of souls there were in 1857, 188,509 amenable to taxation, while during the year there occurred 31,235 births, 21,029 deaths, and 5713 marriages.

the monks, whose geographical knowledge did not seem to extend much beyond the sphere of their vision. At first they confounded Austria with Australia, and fancied we must have come direct from the fifth quarter of the globe, but when the *Novara* voyagers, proud of their Fatherland, refused to permit this opinion to pass current, and gave a more clear explanation, one of the younger monks thought he had at last found out our *habitat*, and evidently priding himself on having solved the riddle, gave his less ingenious brethren to understand that we came, not from Australia, but from Asturias, and were consequently fellow-countrymen! The limited intelligence of the Franciscan mistook Austria for Asturias, and made of the Austrian Empire a Spanish province! Lest the hypothesis should suggest itself to the reader, that this confusion of foreign empires with domestic provinces might possibly have originated in our not being acquainted with the language of the country, it is necessary that we should inform him that one member of the Expedition was thoroughly versed in Spanish, so as to be able to maintain fluent conversation, and that he was perfectly comprehended upon all other topics. Just as little must it be supposed that the above anecdote is but an ill-natured imputation, or the expression of a long-vanished national jealousy, or anything else than a proof of the present state of education among the present occupants of the monasteries of Manila.

The Recoletos watch over the spiritual weal of 567,416* children belonging to parishes in the various islands of the Archipelago, and number 127 brethren.

In each monastery there is what is called a *Procuracion*, where the various printed books published by the order (almost exclusively dictionaries and grammars of the native languages and dialects) are sold for the behoof of the funds of the monastery. The members of our Expedition exerted themselves to form a very complete collection of all such publications; and while thus engaged they also succeeded in getting several MS. treatises on language.† Works and memoirs on the history of the island and the state of its inhabitants are scarcely met with in the wretchedly deficient libraries of the monasteries, which consist of not more than 500 or 600 volumes, mostly works of theology and philosophy. Whatever of valuable literary material may once have belonged to these institutions has apparently been removed to Spain, whose libraries have also gradually absorbed the literary treasures of the monasteries of Central and Southern America.

Besides the monasteries, Government Square (Plaza de Gobierno), in the inner portion of the city, possesses some

* In 1857, the order baptized 23,227, joined in marriage 4830 couples, and buried 15,627.

† The printed works obtained in the various monasteries of Manila consist of dictionaries and small grammars of the Togala, Bisaya, Ilocana, Tbanác, Bicol, and Pampangu dialects. The MSS. embrace vocabularies of the Igorotes and Ilongotes languages of Luzon, as also the idiom used by the natives of the Marianne Archipelago, together with a short treatise on the Marianne group written in Spanish by a missionary. All these works will be thoroughly and exhaustively treated of in the ethnological portion, where also the manuscripts will be published.

little interest for strangers. It has the shape of a large oblong, surrounded on each of its four sides by the palace of the Governor-general, that of the archbishop, the cathedral, and the law offices, with a well-kept garden-plot in the centre, in which is a handsome statue of Charles IV., the whole strongly recalling the principal square in the Havanna. The cathedral is equally as remarkable for the clumsiness of its exterior as for the profusion of perishable gold and silver within. The first edifice was erected by Legaspi, the conqueror of Luzon, in 1571, and was composed of bamboo cane thatched with palm-leaves. The present temple was built in 1654 during the papacy of Innocent X., after several previous buildings had been destroyed, some by fire, others by earthquake. The palace of the Captain-general is an extensive but very simple building, with long wide corridors internally, but which can make no pretensions to architectural magnificence externally. In one of its saloons our Commodore and his companions were received by the Captain-general of the Philippines, Don Fernando Narzagaray, who had held this elevated post since 1857. Formerly Governor of the island of Porto Rico, in the West Indies, Don Fernando was, in consequence of his openly avowed Carlist proclivities, sent into honourable exile to the Philippines, and by a lucky chance is at present once more invested with the dignity of one of the highest officials of Queen Isabel II. of Spain. This gentleman received the voyagers of the *Novara* with the proverbial lofty courtesy of

the Spaniards, yet not without suffering to appear in his address a certain embarrassment and hesitation, which however may have been due to his not being sufficiently acquainted with any other tongue than the Spanish, to enable him to use it in giving fluent expression to his thoughts. The conversation turned chiefly upon the scene of our latest visit, Java. Notwithstanding the not very formidable distance, and the constant communication existing between the two islands, the Captain-general seemed to have but a very vague conception of the political and social condition of Java, and framed his questions as though they related to some remote island, in some entirely different section of the globe, rather than an island in all but immediate vicinity. As we prepared to return to our vehicles, Don Fernando made use of the usual unmeaning compliment *Usted* sabe que mi casa es à la disposicion de Usted!*" (You know you may consider my house as entirely at your disposal):† it would rather have astonished him though, had his visitors taken him at his word!

* *Usted*—contraction for "*Vuestra Merced*" (your Grace).

† The fair speeches and amiable phrases of the Spaniards lose all their value when one finds upon nearer acquaintance with this courteous nation, that the heart and the feelings take no part therein. There is nothing which a Spaniard will not offer to a stranger—but it is always on the clear understanding that the latter will with equal politeness refuse the proffer. We on one occasion, however, saw a Yankee take these professions at their apparent value, and by so doing put his Spanish host to no small confusion. The Spaniard wore a very costly diamond breast-pin, for which the American could not find words sufficient to express his admiration. To his exclamations of delight, the Spaniard kept repeating his nauseous "*à la disposicion de Usted,*" till at last the American fairly took the pin out of the Spaniard's scarf and transferred it to his own. The latter felt so ashamed

Passports, which are absolutely necessary in Manila to make the very shortest excursion into the interior, are given with the utmost alacrity to strangers, without any one thenceforward paying the slightest attention to enabling any expedition to carry out its objects. This cold, utterly indifferent treatment was doubly felt by travellers fresh from Batavia, where they had been overwhelmed with every sort of attention.

In the office of the Captain-general we saw several large sheets of printed matter in columns, suspended on the walls, which we presumed were the annual statistics of the commerce of the Archipelago, and accordingly requested one of the officials to provide us with one. It was only when unfolding a little later the documents which had been so readily given to us that we discovered our error, and became aware that these tables printed with such care and elegance did not in any way refer to what we had supposed, but were the statistics of the various monasteries, and their inhabitant brethren throughout the Philippines. We had far greater trouble and difficulty ere we could get at the particulars of the natural productions and state of trade of Manila.

When the visitor passes through the St. Domingo gate to the suburb of Binondo, on the N.E. side of the inner city, we traverse what is called the Isthmus, a narrow strip of

and dumbfounded that he could not utter a word. The following day the American, who had only taken it by way of joke, returned the costly bauble to the agonized Spaniard, but took occasion in so doing to remark that he now knew what was meant by Spanish courtesy.

meadow-land, surrounded by water on both sides, on which has been erected within these few years a simple monument in honour of Magelhaens, the discoverer of the Philippines, who, wounded by a native with a poisoned arrow, breathed his last, 15th April, 1521, on the small island of Mactan, lying opposite Cebu. A Doric column of black marble, 76 feet high, with inscriptions engraven on the four sides of the pedestal, lifts its head here since 1854,* and is altogether a more appropriate monument than that which the Spaniards erected at Havanna to the greatest navigator of any age, Christopher Columbus, to whom they owe all their after power and greatness, on the spot where his ashes reposed for many a long year in the cathedral before they were conveyed back to Spain. A poor insignificant votive tablet, built into a recess near the altar, is all that intimates that there once reposed there for a season the mortal remains of the man who, to use the words of a German poet, "bestowed on the world another world."†

On this isthmus are situated the most delightful pleasure grounds in Manila; the esplanade, with its simple, shady walks, and benches on which to repose, and further on, nearer the sea on the left bank of the river, the "Calzada" dam (causeway). Hither every evening comes the gay

* On the island of Mactan (10° 20′ N., 124° 10′ E.) there was also erected on the promontory of Sugaño a monument to the memory of Magelhaens, and the happy idea was entertained of making it also into a light-house, to warn ships of the danger in approaching the immense numbers of reefs that are found here.

† V. Heinrich Heine's "Romanzero."

world of Manila, in long rows of carriages, to be fanned by the delicious cool sea-breeze. Arrived at the farther extremity of the promenade, the coachman, resplendent in gorgeous livery and large shining top-boots, for he does not drive from the box but rides postilion, is usually ordered to stop, and the gentlemen leave the carriage in order to chat with the ladies in the surrounding vehicles, just as we accost our fair friends in the theatre, and pay our visits in the boxes. For in Manila there are neither theatres nor concert-rooms, and the public promenade is therefore the only rendezvous of the "beau monde."

Unfortunately we reached Manila in the height of the rainy season, when even the attractiveness of nature can only be guessed at by occasional glimpses, and the delightful outdoor life which enlivens the streets and the front porch of the private residences of the inhabitants, is utterly arrested. Here, as in Batavia, the tropical rains fall with a violence of which a native of the northern climates, who has never lived in the tropics, and knows only the rainfall of his own country, can hardly form any conception. In July, 1857, it rained here for fourteen days uninterruptedly, so that the Pasig overflowed its banks, and people were ferried about the streets of Manila, as in the city of Lagoons, by means of small boats, called here *bancas*. This inundation was converted into a merry-making, and visits were paid on all sides in elegant little boats.

The one sole amusement with which even the rainy season

cannot interfere, is cock-fighting. So soon as the bad weather has fairly set in, universal recourse is had to this, the most popular of amusements, whose cruel, murderous issue is strangely in contrast with the mild, soft, timid character of the natives. These "*Gallos*," as they are called, are a monopoly of Government, that is to say, they can only be held with their permission, and upon payment of a fee for such license. The revenue which Government derives from this anything but civilized amusement is very considerable,* and the fee paid by the owners of the cocks and the spectators is at any rate the least objectionable part of the spectacle; for far larger sums are lost in the betting. What cards and hazard are for *blasée* Europe, cock-fighting is for the simple native of Manila. Such is their passionate excitement, that several days elapse before their ordinary apathy subsides into its state of chronic contentment. It is singular that, with the exception of the Spaniards and the mixed race founded by them in various distant parts of the world, there is not now one single civilized nation that can find any pleasure in such brutal amusements as cock-fights and bull-fights.

The scene of action is a small building, built of bamboo, and thatched with palm-leaves, in the interior of which the benches for the spectators rise behind each other in form of an amphitheatre, while the arena, or pit, is filled with the owners of cocks and betting-men, until the signal for the

* It was estimated, we were told, at from $35,000 to $40,000 annually.

commencement of the combat is given. Each owner caresses or incites once more his champion, or to prove his courage flings him against one of the other cocks. At last the spectators have decided to back one or the other of the cocks, red or white, the flat comb or the round comb; the bets are "on," and the "spur," a sharp-pointed weapon above two inches in length, and provided with a sheath, is firmly attached to the right foot. Then the two cocks are simultaneously swung against each other, and a few feathers are plucked from their necks to excite their fury. The bell in the hand of the director gives the signal for the commencement of the "main." The spectators retire from the "pit," the sheaths are taken off the trenchant spurs, and the encounter commences. Most marvellous is the eagerness for the fray, the dogged valour, which these two knightly antagonists display to the very last gasp; how even wounded, bleeding, and sorely fatigued, they will not give up the contest! Occasionally it happens that neither of the combatants is hailed the victor. The extraordinary keen, sharp "spur" sometimes wounds both warriors with terrible severity, till with severed limbs, and bleeding from every pore, both lie dead on the field of battle.*

* Cock-fighting has been so long disused in England, that to most persons it only lingers as a grim tradition, mainly authenticated by Hogarth's well-known painting. The degrading associations which a cock-fight generated are sufficiently well illustrated by the prince of pictorial satirists. The "betting-ring" still brings together in England the same intermingling of grades of society, and consequent utter disruption of all social respect, but with all its faults it never has, nor can have, the same brutalizing effects of cock-fighting, which are instanced by the following anecdote,

Very comical is the method hit upon in those places of amusements to supply the places of the return tickets in use amongst ourselves, and at the same time render it impossible for any different person to make use of them. When a native wishes to leave the apartment with the intention of returning he has his naked fore arm, near the wrist, stamped as he goes out with a black die, which secures his re-admission, and at the same time obviates all anxiety as to his losing his return ticket! On his return this mark is easily wiped out.

During our stay occurred the "*Fiestas Reales*," or royal fêtes, which were given by the Colonial Government in honour of the birth of an heir to the Spanish throne, Don Alfonso, Prince of the Asturias. The little heir-apparent had, in fact, seen the light in the month of November preceding, at Madrid, but when the news reached the Philippines it was Lent; respect for the tenets of the Catholic Church deferred the festivities, and afterwards the various fire-works, tri-

extracted from the *Gentleman's Magazine* for April, 1789, and which may even now be found to repay perusal:—"Died at Tottenham, John Ardesoif, Esq., a young man of large fortune, ... who if he had his foibles, had also his merits (!) that far outweighed them. Mr. Ardesoif was very fond of cock-fighting, and had a favourite cock, upon which he won many very profitable matches. The last bet he laid upon this cock, he lost; which so enraged him that he had the bird tied to a spit, and roasted alive before a large fire. The screams of the miserable animal were so affecting that some gentlemen who were present attempted to interfere, at which Mr. Ardesoif was so enraged that he seized a poker, and with the most furious vehemence declared that he would kill the first man that interfered, but in the midst of his asseveration he fell dead upon the spot! Such we are assured were the circumstances attending the death of this great pillar of humanity!"

umphal arches, illuminations, &c., took so long a preparation that the month of June and the rainy season were again at hand before the fête could be held, which owing to the latter circumstance fell through, and excited hardly any interest. That intelligence should be so many months in arriving at the Philippines is due less to their great distance, than to the little care taken by Government to promote the public interests. Until 1857, all letters to Europe were for the most part dispatched by sailing-vessels, so that letters remained four or five months on the way, and owing to the uncertainties of the length of passage made by the various vessels, it was constantly happening that the last letters sent came to hand before those dispatched several weeks earlier. This irregularity and uncertainty weighed so heavily upon commerce, that since March, 1858, there has been established regular communication by steam between Manila and Europe, the epistolary matter from Europe, for the residents throughout the Archipelago, being conveyed by a Spanish steamer from Hong-kong, which is distant only 600 miles, while all letters for Europe are conveyed to the latter port in time for the mails of the 1st and 15th of each month, whence they are forwarded together with the English correspondence viâ Singapore and Suez.

On the other hand there is up to this moment no regular communication with any of the adjacent islands in the Archipelago, even the Government only availing itself of such sailing-vessels as private adventurers may from time to time

charter. When any change of officials takes place, the new appointment must often remain vacant for months till the occupant reach his post; indeed, during our stay in Manila we witnessed a case in which the consort of the Governor of the Marianne Archipelago had been vainly waiting for months for an opportunity to return to her husband.* Some foreign merchants settled at Manila had made an offer to the Government, in consideration of a fixed subsidy, to establish regular communication between the various islands of the Archipelago, and to keep it on foot by means of five steam vessels. But the Colonial Government did not see its way to giving the company a larger subsidy than 43,000 Spanish piasters (£6763 at par), and thus the whole plan once more fell through, the carrying out of which would so greatly tend to the development of these islands.

Notwithstanding the fertility of the islands in all manner of natural wealth, there are at present but three products of the soil which are exported in anything like large quantities to the European and North American markets, and which thus give this group any importance in the eyes of the commercial world, viz. tobacco, Abáca, or Manila hemp, and sugar. The amount of all other articles exported, such as coffee, indigo, Sapan wood (*Cæsalpinia sapan*), straw-plait,† hides

* This unhappy lady died a melancholy death, having, what rarely occurs among Spanish women, committed suicide at her hotel by swallowing Prussic acid. It was rumoured that an unhappy attachment led to this fatal resolve.

† Of these straw-plait manufactories the cigar-holders are especially noticeable for their fine texture and elegance. These are usually sold at very high prices; some of

and skins of animals, &c., is proportionately but small. We visited the great manufactories of Binondo, as also that of Arroceros, where *cigarillos*, or paper-covered cigarettes, are exclusively manufactured. The former gives employment to about 8000 work-people, mostly women. In the long workshops, where it is common to see 800 females sitting at work on low wooden benches in front of a narrow table, there prevails a most disagreeable deafening hubbub. Some are busy moistening the leaves, and cutting off the requisite lengths, or are sorting the fragments and smaller pieces, of which inferior cigars will be made; others hold in their right hand a flat smoothed stone, with which they keep continually pounding each single leaf, in order to make these more susceptible of being rolled up. This drumming noise, and the cries of several hundreds of workwomen, who, on the appearance of foreign visitors, handle their implements of stone with yet more energy, apparently out of sheer wantonness, the strong odour of the tobacco, and the disagreeable exhalations from the bodies of so many human beings shut up together in one close apartment, in a tropical temperature, have such an unpleasant, uncomfortable effect that one hastens to exchange the damp sultry vapours of the workshops for the fresh air without.

In the *Cigarillo* manufactory about 2000 workmen find em-

the more elegant of these fetching from 40 to 50 dollars (£8 to £10). Straw mats and hats, not inferior in fineness of texture to those of Panama, are made here of palm fibre, and form a not unimportant article of exportation.

ployment. Here also there is felt in the workshops the same clammy, sultry atmosphere. A workman can make about 150 packages of 25 cigarettes, or 3750, per diem, for which he is paid four reals * (1*s.* 7*d.* English). Most extraordinary is the rapidity, bordering almost upon the magical, with which the cigarillos are counted, divided into packages, bound up, and stamped. The unpractised vision of the visitor is hardly able to follow the celerity of motion of the workman's hands and fingers.

Besides the two factories already mentioned, there is yet a third cigarillo manufactory in Cavite, which employs 4000, and a fourth in Malabon, employing 5000, workwomen. The quantities annually produced by these various manufactories amount to about 1,200,000,000 cigarillos. If we deduct the numerous holidays of the Church, on which no work is done, we shall find that about 5,000,000 must be made daily. Government buys up each year from the planters the entire crop of tobacco at a fixed price, and exports it partly in leaf, but for the most part in cigars, the right to manufacture which no one possesses but the Government. The monopoly of tobacco was, after great difficulties had been encountered, first introduced into the Philippines in 1787 by Don José Basco, the then Governor-general.

The greater part of the cigars are shipped to the East Indies, the islands of the Malay Archipelago, and North America, only a small quantity in proportion coming to Europe for sale.

* 8 reals=1 Spanish piastre=3*s.* 1¼*d.* at par; hence 1 real=4.71875*d.* English.

The principal tobacco-growing districts of the island of Luzon are Cagayan and Bisayx, in which on an average 180,000 cwt. of tobacco are grown annually; of these about 80,000 cwt. are sent annually in the leaf to Spain, while the surplus are worked up into cigars in Luzon itself, sold at auction (*al martillo*) every month, and knocked down to the highest bidder. The average price is 8 to 10 dollars per 1000 *Costados*. There is but one species of tobacco grown in Manila, and the size of the leaf is the sole element that regulates the value. The Manila tobacco is a very strong narcotic; there is, notwithstanding the prevailing opinion in Europe, no opium mingled with it; one end being simply dipped in rice juice to glue it together. Indeed, the enormous cost of that liquid drug, which plays so important a part in the history of the Chinese empire, would alone prevent its being used. As cigars are greatly in request by both sexes in Manila, and it is necessary first to provide for the supply of the country itself, it occasionally happens that the stocks are not sufficiently large at once to supply all demands for exportation. Except during the public sales by auction, no one is permitted to buy of Government more than 1000 cigars at once, a regulation most vicious in principle and useless in practice, as persons who wish to possess larger quantities of cigars have simply to send round to any number of persons in the tobacco trade, in order to provide themselves with what they require. We ourselves experienced how any one, who was desirous of buying 45,000 cigars, sent 45 different

individuals to the bonded magazine, from which each brought 1000 cigars without any further interference.

Athough altogether more tobacco is raised on the island of Luzon than in Cuba, yet the exportation from the former is far less in quantity, for the reason already commented upon, that a large portion of the tobacco so grown is consumed in the country itself. Luzon provides $\frac{1}{10}$th, and Cuba $\frac{1}{12}$th of the entire production of tobacco on the earth, which amounts to 4,000,000 cwt.* There are indeed two countries which produce a far

* Owing to the universal interest felt in tobacco, the use of which has spread over the globe, till it has become a necessary of life to the civilized man as well as the half-savage races of mankind, we subjoin by way of completing the information above attained, the following remarks upon the tobacco culture in other possessions of Spain, extracted from an unpublished journal, kept by a member of the Expedition, during a visit previously paid to the West Indies.

"The best sites for growing tobacco in Cuba lie to the westward of the capital in what is called the *Vuelta abajo*, between Rio Hondo and San Juan de Martinez, and is about ten English miles in circumference; the tobacco grown on the *Vuelta arriba* is usually of inferior quality. In 1856 there were in Cuba 10,000 plantations or *Vegas*, with a superficial area of 8000 *Caballerias*, (about 414 square miles, 1 Caballeria being equal to 160,371,041 English square yards, or 33,134 acres), cultivated by from 14,000 to 16,000 negro slaves. The total value of the capital employed in this branch of culture (including manual labour, building utensils, draught animals, &c.) may be estimated at 13,000,000 piasters (£2,730,000), and the average weight of tobacco produced at a million and a half *arrobas*, or 37,500,000 lbs. annually. Of this quantity 400,000 *arrobas*, or 10,000,000 lbs., are consumed in Cuba itself, while the rest is exported partly in the leaf, partly in the manufactured state. One *Caballeria* of ground can produce on the average about 360 *arrobas*, or 9000 lbs., of which however only $\frac{1}{20}$th will be of superior quality.

A "*vega*" usually consists of three *Caballerias*, which are in regular succession devoted to the tobacco cultivation, so that while two are devoted to maize and other vegetables for human subsistence, only the remaining third is under tobacco. The season for sowing is in October or November, and the crop is got in in January or February. On one *Caballeria* there are usually found under favourable circumstances 500,000 plants or *Matas*. Hence it results, that as the tobacco culture of Cuba

larger quantity of tobacco than either Luzon or Cuba,* but in no other country does the tobacco leaf attain such superior quality, owing to favourable climate and congenial soil, as in the Spanish possessions already named.

Another chief product of the Philippines, which first found its way into the markets of the world from these islands, is what is called Manila hemp. This, however, is not the common hemp plant (*Cannabis sativa*), but is procured from the fibres of

extends over 8000 *Caballerias*, there are throughout the island 4,000,000,000 plants. Each plant has from 8 to 10 suitable leaves. They are collected together in bundles, called *manojos* (handfuls), of from 120 to 130 leaves each, and 80 *manojos* make one *tercio*, or 150 lbs. of tobacoo. One *manojo* weighs about 1¼lbs., and when prepared makes into about 400 cigars. There are in Cuba altogether 600 cigar manufactories, of which above 400 are in the capital alone. A workman can make about 150 cigars a day; the rate of pay is about 10 Spanish piasters or *duros* for 1000. The manufacture of cigars gives employment to about 20,000 workmen, chiefly males. Under the designation of *Tabagueros*, they constitute almost an exclusive class, and owing to their improvidence are usually in wretched plight. In Cuba (as in Luzon) there is but one species of tobacco raised, but more attention seems to be paid to its cultivation in the former island. The leaves are sorted in Cuba according to colour and "vein" (*venas*); and their quality fixed accordingly. In commerce there are three sorts, viz.—

No. I. 42 to 45 Spanish piasters (£6 15*s.* to £7 5*s.*) per 1000.
II. 32 ,, (£5) ,,
III. 28 ,, ,, (£4 10*s.*) ,,

The number of cigars annually exported from the Havanna averages from 200,000,000 to 250,000,000, without including the *ramos*, or tobacco exported in the leaf. The cedar-tree (*Cedrela odorata*), of which the cigar-boxes are chiefly made, is occasionally prejudicial to the contents, in consequence of the slight dampness still remaining in the wood bringing out white spots of decay upon the tips of the cigars.

* The United States of North America produce above 200,000 cwt., or more than one half the whole supply. The annual consumption of tobacco by the individual is in the United States 3½ lbs., in England 1 lb. and ½ oz., in France 1 lb. 1½ oz., and in Germany 2 lbs.

the "*Musa textilis*," a species of banana, and is called by the Tagals *abáca*. The plant comes in great quantities from almost every one of the Philippines, from Luzon to Mindanao, so that the area over which it extends stretches between the equator and 20° N. This seems, however, to be the most northerly limit of vegetation of the *Musa textilis*, and consequently it is out of question to attempt to introduce into Europe the cultivation of this most useful plant, which, ere it can be profitably grown, requires a temperature of 77° Fahr. The stem of this *musacea* grows in the Philippines to a height of from 9 to 12 feet, by about 6 inches in thickness, its leaves being of an exceedingly dark green colour, 8 feet in length by $1\frac{1}{2}$ feet in width. The fruit is smaller, and neither so yellow nor so palatable as that of the common banana. To procure the hemp, the trunk, so soon as the fleshy bulbous fruit makes its appearance, is stripped of its splendid leaves, which serve as fodder for the oxen, and is left about three days to ferment. It is then peeled off in pieces, which by the application of a corresponding pressure are drawn between two knives, not too sharp, in order to separate the hemp, which now begins to be visible, from the bast, which, owing to the fermentation, has become rather brittle. This process is continued until the hemp is sufficiently cleaned to admit of its being spread out and dried in the sun. A skilful workman may make extract from 8 to 10 feet of hemp a day. There are 450,000 cwt. of hemp produced annually, of the value of £520,000, the greater part of which is sent to the United States of North

America, while from 30,000 to 60,000 cwt. is manufactured into rigging for ships in the country itself, at the splendid factory of Messrs. Russell and Sturgis, an American firm, by whom it is exported to Singapore, Australia, and China. This raw material, as well as the various products manufactured from it, has a magnificent future opening to it, and will ere long compete advantageously with English and Russian hemp in the European markets. The principal objection as yet made to the use of the Manila hemp for rigging, viz. its contracting in wet weather, can easily be obviated by more careful treatment of the fibres in the process of manufacture. On the other hand, in strength and elasticity the abáca surpasses its rival, as has been proved by repeated experiments, especially over common European, and even Russian, hemp.* Messrs. Russell and Sturgis have, it is true, monopolized the hemp product of the entire Archipelago, but under their fostering care it must sensibly increase and become perceptibly improved. From the leaves of *Musa textilis*, like those of all other species of the banana tribe, very excellent paper can be made, and by the increasing cultivation of the *musaceæ* in the

* The experiments made at Fort St. George near Madras in July, 1850, with lines and rigging made of abáca and European hemp, with the view of testing their respective availability, gave the following interesting results: a rope of Manila hemp, 12 feet long, $3\frac{1}{4}$ inches in circumference, and weighing $28\frac{11}{16}$ oz., required a strain of 4460 lbs. to break it: on the other hand a rope of English hemp of similar dimensions, weighing 39 oz., broke with a strain of only 3885 lbs. A second smaller rope of Manila hemp, $1\frac{3}{4}$ inches thick, and $9\frac{1}{2}$ oz. weight, also 12 feet in length, required 1490 lbs. to break it, while an exactly similar cord of English and Russian hemp, weighing 13 oz. per fathom, broke with 1184 lbs., so that in the first instance the abáca line was 13 per cent., and in the second nearly 22 per cent. stronger than ropes of similar size of European hemp.

tropics, two main objects could be attained, viz. providing a plentiful subsistence for the natives, and extending and cheapening the medium that mainly contributes to widen the circle of knowledge of mankind.*

Next to *Musa textilis*, the Ramé shrub (*Boehmeria tenacissima*) especially deserves the attention of business men. The fibre of this member of the *urticaceæ*, which unites extraordinary toughness with much beauty and fineness, is stronger and more durable than that of Russian hemp, and with careful preparation would make into finer thread than the very expensive material which is used in Europe at the present day for making the world-famous Brussels point-lace. The variety of purposes to which this useful plant may be applied has hitherto been less fully recognized than those of the Manila hemp. In Europe the *Boehmeria tenacissima* is but found in botanical gardens, or herbariums, and as yet not the slightest use is made of it for industrial purposes. And yet the introduction on a large scale of Manila hemp and Ramé fibre into the European markets in place of Russian hemp, would have more than merely a commercial and industrial importance! †

We may also notice in this connection another description of fabrics made from fibrous material, which, though but little known beyond the limits of the Archipelago, seems to us to deserve to be more extensively known, and, it would seem, may

* Compare with Forbes Royle's valuable treatise upon Manila hemp, entitled "The Fibrous Plants of India fitted for cordage, clothing, and paper." London, 1855.

† The best Manila hemp is worth from 4½ to 6 dollars per Spanish *picul*=140 lbs. Cordage made by steam power of the various dimensions, from half to one inch thick, sells at 25, and from one to five inches thick, at 10, piasters per *picul*.

be most profitably taken up. These are the delicate almost transparent tissues prepared from the fibres of one of the *Bromeliaceæ* (*ananassa sativa*), which are used by the natives for ornamental shirts, *chemisettes*, and neck-laces, and are known in commerce by the names of *Piña* or grass-cloths.* The threads of these textures are so thin, that they can only be woven in apartments where there is not the slightest breath of air. The natives contrive to weave them into the most beautiful designs, and were they submitted to some chemical process which should impart to the web a clearer colour, less of a dirty yellow, the world of taste would be enriched by the addition of one of the most exquisite materials that could be presented to adorn the graceful form of woman, and while seeming to conceal her charms, would but render them more conspicuously attractive.

Although the rainy season, during which we visited Manila, was but little inviting for excursions, we yet could not resist the temptation to make an excursion to the celebrated *Laguna de Bay*, a short distance in the interior. Mr. J. Steffan, consul for Bremen, a Swiss by birth, and a partner in one of the most eminent mercantile houses in Manila (Jenny and Co.), who from the moment the Austrian expeditionaries set foot in the Philippines manifested to them the most delightful hospitality, was on this occasion also our companion and cicerone. Two other foreigners, an English artist and a merchant from Am-

* The fabrics known by the name of *Sinamay* are on the other hand made of the fibres of the *Musa textilis*. They are of less gossamer tissue, but almost transparent, and far more durable than the fabrics made from the Piña.

sterdam, joined our party. The first-named had lived for long on the island, and had already visited all its most accessible spots, whence he had returned with some very accurate sketches; the latter had been sent out by his firm to Manila, in 1857, when the price of sugar had fallen, for the purpose of purchasing, at the price to which he was limited, a large quantity of that important article of colonial produce. By the time, however, he had reached the capital of the Philippines, the value of the sugar had already, in consequence of a favourable crop, exceeded the limit assigned him, and has since then advanced 300 per cent. Still the Amsterdam agent held on, awaiting a fall, and meanwhile did his best to wile away his time of exile by feasting his eyes with all the various beauties of the island.

On a grey, dreary morning we found ourselves pulling up the Pasig in small covered boats, till we reached the Lagune, where a larger craft was awaiting us, to take the entire company of pilgrims on board and transport them to the opposite shore of this inland lake, as far as Los Baños. In clear sunny weather a row in a *banca* upon the river Pasig, the aorta of Manila, which forms the communication between the city and the Lagune, together with all the various settlements along the shores of that internal sea, must be exceedingly pleasant. The banks of the river, indeed, are flat and unsightly, but the vegetation rejoices in a marvellous profusion of the most beautiful forms and colours. The *Bambusaceæ* are the chief ornament of the shores, on which there are but few palms to

be seen, while the banana, the sugar-cane, or the rice-plant are only exceptionally met with at certain points. The delicate-leaved bamboo accordingly presents hereabouts an elegance and variety of form, which at first sight seems to mark out its individual representatives as belonging to so many different families of plants. Wherever the subjacent rock is visible along the banks it presents beds of an ashen-grey pumice-stone, which constitutes the chief building material of Manila. On the shores of the river, near the city, are situate the various factories and iron-foundries, above which are the residences of the wealthy Mestizoes and foreign settlers, as also the country-seat of the Governor-general, whence, still ascending the stream, are Tagal villages of wretched cane huts, grouped round stately churches and parsonages, which peep picturesquely through lovely groves of bamboo.

There are three modes of boating on the Pasig and through the Lagune, namely, the *banca*, consisting of a large trunk of a tree hollowed out and covered with an awning of bamboo; the *lorcha* or *falúa* (corruption of felucca), large, comfortable, but exceedingly clumsy row-boats, which, particularly during the rainy season when there is a heavy sea running, are those chiefly used in this navigation; and finally, the *casco*, which is of equal breadth at either end, and has more the appearance of a raft. The last-named is principally made use of for the transport of heavy merchandise, and is in especial favour with the natives, for the reason that it is practicable to hoist sail upon it as well as to row. On the

Lagune there is also found yet a fourth kind of boat, the Paráho, the principle of which, as well as the name, has obviously been borrowed from the Malay *Prahu*, which it closely resembles in form and mode of steering.

On the Pasig there is a constant and amazing tide of human activity. Numberless boats pass and repass, some bound for the city, to supply it with provisions and other necessary articles, even to drinking-water, which has to be shipped in casks at a considerable distance, others returning with all sorts of purchases made in Manila, for the supply of the various residents on the shores of the Lagune with the necessaries of life. On this voyage we got a sight of numbers of grackles (*Pastor Rosen*), the well-known grasshopper-destroyer, which, about five years before, had been introduced from China at considerable expense, with the view of extirpating this formidable locust. But since these birds, to kill which is punishable by imprisonment, have become acclimatized, they seem to have lost all relish for grasshoppers, sitting quiet and unmoved on the trees and roofs of the houses, while swarms of locusts are disporting under their very eyes. Apparently the number of these destructive insects is less great in China than in Manila, where these voracious wanderers often appear in dense swarms, which, in the shape of black clouds, absolutely obscure the daylight! Probably, too, their means of sustenance is much more limited in China than in the Philippines, where these birds, being in fact treated as tame animals, and fairly do-

mesticated, find frequent opportunities of satisfying their hunger otherwise.

At the village of Patero (from *Pato*, duck), which is situated five miles from the capital on the left bank, the inhabitants are mainly employed in breeding ducks. In front of each hut, and near the river, there is a large area fenced in, where these birds can bask in the sun or bathe at pleasure. The floor of the little poultry house is carefully cleaned every morning with river water, and the ground dug up and plentifully filled daily with shell-fish for the use of the ducks, which the natives bring in their small canoes from the sea, where they thrive by millions in the mud. The spectacle of the gently-sloping assembling-places of these cackling denizens of the watery element, and the clamours with which we were saluted, strongly recalled to us the penguins of the Island of St. Paul. In Patero millions of ducks are annually reared as articles of trade, as the Tagalese look upon the half-hatched eggs and the new-born chickens as special dainties.

The natives whom we met on the way all wore large round hats, made of plaited straw or bamboo, white hose, and above these the invariable shirt, a custom so singular, that it is but very gradually the eye of the foreigner becomes reconciled to it. The further we got from the capital the more the use of Spanish seemed to diminish, till at the Lagune the natives only speak Tagal and Bisay.

Our original intention had been to row up in *bancas* as far as the entrance to the Lagune, where it had been ar-

ranged that the *lorcha*, which had started from Manila a day or two before, was to await our arrival. But when little more than half way beyond the village of Pasig we overtook the great clumsy concern, and it was forthwith resolved to remove into it bag and baggage, not forgetting the "provant," and endeavour to make ourselves as comfortable as we could for a few days and nights.

As it was perfectly calm, and the *lorcha* had to be poled along, we were a considerable time before reaching the entrance to the Lagune, where the industrious natives had erected a variety of nets and other fishing apparatus of very peculiar nature. The banks of the Lagune are for some distance from the shore thickly studded with thousands of what are called *coráls*, or fish-runs, and a special pilot is required to enable the *lorcha* to thread this labyrinth of fishing apparatus of every conceivable form, so as to reach the open water. Singularly enough, it is for the most part the Tagalese women who manipulate the fishing instruments, while the men, as we were told, sit in the house and embroider. Near the entrance is stationed a sort of guardship. A Tagalese overseer overhauled our passports, turned them over in his hands two or three times with much official importance, and then returned them to us. The worthy officer of the law was obviously ignorant of the art of reading, but for that very reason he looked doubly massy, for fear of exposing his weak side to the Europeans.

The Lagune de Bay is a fresh-water lake of such dimen-

sions, that even on a clear day it is impossible, from the entrance, to see the coast on the further side, much less, of course, in the wretched rainy weather which stuck by us throughout our trip. Nevertheless, it is far inferior in size to the great lakes of North America. Its greatest breadth is little more than 30 miles.* All around the fertile shores of this charming lake nestle little villages, and the daily intercourse with the capital is so extensive that a steam-boat company would pay well. While on the one hand the Colonial Government objects to the expense of entering upon an undertaking so important for developing the general trade, engineers, on the other hand, have for the last 14 years been busily engaged projecting the immense work of connecting the Lagune with the ocean by means of a canal, in such manner as would enable ships approaching Luzon from the southwards to reach Manila easily, and with great saving in time, instead of having to sail all round the island. This short cut through the tongue of land would, it may well be supposed, be in other respects of incalculable benefit for the country, for the shipping and for trade generally, especially were the execution of this splendid project to be carried out hand in hand with a liberal policy, that should shake off that despotism which at present weighs like a mountain upon every sort of intellectual and political activity.

* According to Buzeta the Lagoon is 36 Spanish leagues in circumference, by an average depth of 15 to 16 *brazos* (fathoms). While thirteen rivers of various dimensions flow into the lake, the Pasig alone issues from it, to carry off its waters to the sea.

Let Manila be declared a free port, let the ships of all mercantile nations visit unrestrictedly the various harbours of the Archipelago, and Spain will under such relaxations reap far more profit than from her present retrograde colonial policy, which can only result in permanent discontent and impoverishment. A thoroughly unprejudiced Spanish statesman might make most valuable observations by a brief visit to the neighbouring colony of Singapore, that marvellous British settlement, which, owing to a commercial policy conceived in the free, liberal spirit that characterizes the 19th century, has sprung up from a nest of pirates into the most flourishing and the wealthiest emporium in the entire Malay Archipelago. The situation of Manila, as also its numerous natural advantages and resources, would soon make it a rival to Singapore. But of what avail are the choicest treasures of nature, if the mind be wanting which can turn them to their proper use, and elicit their real value?

The continued bad weather compelled us to pass the night most uncomfortably on board the *lorcha;* however, the morning after our departure from Manila we arrived at the village of Los Baños on the southern shore of the Lagune, where we were most courteously received by Padre Lorenzo, a Tagalese (only the monks being of Spanish blood, whereas among the secular clergy there are numbers of coloured persons). The parsonage, formerly an hospital, is an extensive edifice, with covered terraces, from whence the visitor enjoys the most splendid views of the neighbouring hills, as also

over the village. Here we were rejoined by those members of the Expedition who, there not being room for all on board the *lorcha*, had made out the voyage to Los Baños in a small boat. The Government officer of the village of Pasig was so kind as to provide for our exploration of the lake a well-appointed, thoroughly armed and equipped war-galley; by no means a superfluous precaution when making an excursion upon the lake, as it has not unfrequently happened that unprotected strangers have returned to Manila robbed of everything.

We had great difficulty in making our kind Father Lorenzo, whose wanderings had been rather limited, comprehend from what country we came, and to what nation we belonged. The natives of Luzon for the most part believe that all mankind consists of but two nations, Spaniards and English; the former they regard as their own masters, while the political and commercial power of the latter impress them with more terror than sympathy; and this feeling is still further deepened by that spiritual teaching, which makes everything seem to their untutored minds of the most terrible criminality, which does not strictly accord with Roman Catholicism.

Los Baños (the baths), so named on account of the numerous hot springs, whose source is close at hand at the foot of the now extinct volcanic cone of Maquilui, thickly wooded to its very summit, was so far back as the end of the 16th century a place of resort for invalids, who hoped here to find a cure for their various maladies. In the interests of

suffering humanity, the Franciscans of those days, then in the height of their influence, built over the baths a sort of hut, and a hospital dedicated to "*Nuestra Señora de las Aguas santas de Maynit*" (our Lady of the Holy waters of Maynit, the latter name expressing *hot* in Tagal). Although at present in a very forlorn and dilapidated condition, there is still in existence, quite near to the edge of the Lake, an apartment enclosed within a wall, within which there boils up from a considerable depth a spring of hot water of a temperature of 186°.8 Fahr.; which is occasionally used, both by natives and foreigners, as a vapour bath, although these *Thermæ* are more used to scald poultry than for their original purpose of curing disease. The entire neighbourhood is volcanic. Behind Maquilui, which is about 3400 feet high, lies, surrounded by a deep lake, the active crater of the renowned volcano of Taal, while to one side of the first-named mountain rises in the blue distance, to a height of from 6000 to 7000 feet, the gigantic mass of the Majayjay* range, a volcanic system long since extinct. An oppressive sultriness in the atmosphere, such as we had never before experienced, and a drenching thunder-storm, put a complete stopper on our projected excursion to make a closer acquaintance with the hills. Somewhat of the terrific heat experienced here, may, with much justice, be attributed to the great number of almost boiling springs which issue from the foot of the Maquilui, so that even on entirely clear days, when

* Pronounce Mahayhay.

the mountain-top is quite free of clouds, the country about Los Baños seems enveloped in an atmosphere of mist.

The main object and ever-memorable result of our excursion was the *Laguna Encantada* (or Enchanted Lake,—the *Socol* of the Tagalese), distant not much more than a mile from Los Baños. Volcanic agency and tropical beauty have combined to prepare here one of the most singular and mysterious phenomena that the eye of man may ever behold. Although this small lake is only separated by a low hill from the larger basin, yet the approach to it is extremely troublesome and arduous. It is necessary here and there to use one's hands, in order to creep through the brushwood along the steep wall of rock, till the shore of the lake is at last reached. Even the very "dug-outs," in which the lake is to be navigated, have to be transported over this lonely inhospitable hill. As the Lagune enjoys the unenviable reputation of being the haunt of numbers of ravenous crocodiles, which have on several occasions overturned the light canoes navigating it at the time, and without further ceremony devoured their crews, the natives had learned to take the precaution of binding two or three canoes close together with bamboos and cords, in order to diminish the risk of being overturned while boating on this dreary haunt of "caymano."

While the natives were getting ready this handsome specimen of a craft, we stood on the shore, every one absorbed in gazing at this singular natural picture. Calm and mysterious-looking the lake lay before us, a circular

basin, of a deep green from innumerable almost microscopic water plants, unfathomable, if we may trust common report, and enclosed by a crater-like wall of lava-blocks. All along the shore grew the tropical forest; gigantic primeval trunks, wildly festooned with wondrously luxuriant creepers, raised their towering crests, their splendid coronets of leaves reflected in the calm mirror below, and casting the lake in every corner into a dusky, shadowy obscurity of outline. From the topmost branches of the trees were suspended huge brown, indistinct-looking fruits. There was death-like silence all around. Only at fitful intervals might be distinguished the note of a bird, or the muttered growl of distant thunder. We now got into our canoes and rowed silently over the waters of the lake. As though to add to the interest of the adventure, it came on to rain pretty heavily. Some of the party followed the very practical custom of the natives, who forthwith divested themselves of their clothing, and left the rain to beat upon their naked bodies, while they put their dresses under the seats of the boat to prevent their being soaked. Fortunately the alligators at no time made their appearance in such numbers as the tales of the natives had led us to anticipate. We saw but one of these monsters, apparently about 15 feet long, who however speedily dived out of our sight.* Our guides

* The size attained by the alligator or cayman in the Laguna de Bay borders on the incredible. Baron Von Hügel, in his work already referred to, tells of a French settler in *Jalla-Jalla* (pronounce Halla-Halla), who assured him that he had

maintained it would be advisable to take a dog with us, whose howl would have aroused the alligators and brought them up to the surface in hope as of prey. Indeed people frequently sacrifice dogs in order to entice these rapacious monsters from their haunts for the purpose of hunting them.

If however disappointed in this spectacle, we were recompensed by another not less peculiar. For hardly had a shot been fired at one of the water-fowls which were skimming to and fro over the lake, than at once tree and thicket seemed filled with life. Birds of all kinds, screaming and whirring, fluttered about or dashed wildly against each other on every side. Thousands that had been sitting on the beach concealed in the deep shade, wood-pigeons and legions of gigantic bats, which had been suddenly frightened out of their listless repose, now flew about directly before the murderous fowling-pieces. The singular-looking fruits which seemed to be so strangely dependent from the trees, were transformed into Kalong bats (*Pteropus edulis*), and flew about in immense flocks that obscured the light of day, directly over our heads, hastily seeking a shelter in the forest, which should hide them from the gaze of the sportsmen. Probably we should have brought down some of these singular animals, had not our fowling-pieces, owing to the incessant pour of rain, got so thoroughly out of order that we had to content our-

once killed an alligator, whose head alone weighed 250 lbs., while the body was 10 feet in circumference! It lay buried in the sluice at the mouth of a river, and it proved so difficult to get it brought to land and cut up, that only the head was severed by way of trophy, and brought home to his house.

selves with getting a very few specimens for our zoological collection.

On returning to the parsonage from this interesting excursion, we found the *Alcalde Mayor*, who had come to Los Baños from the adjacent small town of Santa Cruz, to welcome the foreigners, and be of service to them. The *Alcalde Mayor*, or *Gobernador*, is the highest official, the chief both of administration and justice in the province, a sort of prefect, under whom are the *Gobernadorcillos*, or departmental administrators, beneath whom again the Cabezas,* or parish justices, form yet a lower grade. The chief duties of these native officials consist in seeing that the proper amount of tribute or head-money is duly collected. This impost is divided into three parts: the duty for defraying the State expenses amounting to five reals, that for supporting the Church amounts to three reals, and that for the wants of the community amounting to one real, so that the whole taxation levied upon each individual liable is about nine reals (4*s.* 9*d.* English). In addition to the natives, the Chinese resident in Manila and the half-breed Chinese are subject to a poll-tax, the pure Chinese being rated according to their social position and the nature of their calling. They pay on the average about 17 dollars, or about 15 times as much as the native. The poll-tax of the Chinese Mestizo amounts to 18 reals, or about twice as much as that on the native. All males are liable to be rated for the poll-tax, as also all females when

* Cabeza, the head, whence it is further applied to express "chief," or "chieftain."

married, or when they have attained the age of 25. Those exempted from the poll-tax are all Spaniards and their half-caste children, all foreign residents except the Chinese, as also all natives above 60, and a few native families, whose ancestors had performed certain services for the Spaniards at the period of the conquest; and, lastly, all native authorities during their tenure of office (usually six years).

The morning after our excursion to the Enchanted Lake, a hunt of water-fowl was organized among the swamps surrounding Calamba, which furnished us with plenty of sport, as well as important scientific results, in which it would have been yet more productive, had it not been suddenly brought to a close by the acute illness of one of the canoe-men. As some cases of cholera had occurred during the few days immediately preceding, it seemed to be only a wise precaution to exercise some little prudence on the present occasion. Strange to say, however, the man attacked, despite his sickness, rowed resolutely till the party reached Los Baños, during all which period he showed the most lively interest in the hunt, constantly calling our attention to birds which his keen eye detected at a distance, or which were moving softly over the water without being observed.

Meanwhile one of the zoologists was busy at the parsonage, making preparations of the most interesting specimens pro-

* Another description of tax is the compulsory labour exacted from the natives, which is expended in the construction of roads and bridges, transmission of mail matter, transport of military baggage, luggage of travellers, &c. &c.

cured. Padre Lorenzo could hardly believe his eyes when he beheld the naturalist engaged in such a bloody business, apparently on precisely the most agreeable spot of the whole terrace, and performing the various dissections requisite upon the dead bodies of some couple of dozen of birds. In whatever direction one turned in the apartment, the eye encountered nothing but birds of variegated plumage, gigantic Kalong bats, monkeys, or else barrels filled with spirits of wine, in which were preserved snakes, fish, and other small inhabitants of the deep. The poor padre, accustomed to peaceful meditation and full of simplicity, appeared quite convinced he must have sinned grievously that such a visitation should have overtaken him, as that this horde of foreigners should have disturbed the repose of his peaceful asylum with such appalling practices. The youths of the village, encouraged by the promise of remuneration, busied themselves with yet further increasing our zoological collection, and made their appearance, breathless with running, each with some still more curious and important object to show to the strange gentleman, who found such interest in snakes and insects, that he even paid money down for them!

Padre Lorenzo, however, was ere long rid of his singular guests, with whom he could even not get upon an intelligible footing. On the same day on which the hunt among the swamps of Calamba took place in the morning, the Expeditionary party returned from Los Baños, and by way of recompense to the obliging padre for the discomfort inflicted,

they presented him with some provisions and some bottles of claret, which filled the worthy gentleman with delight, and seemed completely to reconcile him to the "Estranjeros." Some of the members of our Expedition also visited the two villages of Jalla-jalla and Binangonan, lying close to the shore of the lake, places of great interest in a geographical sense, while the remainder of the party returned to Manila in the same way they had come. Unfortunately throughout the entire distance the rain fell worse than ever. It never ceased pouring in deluges, so that for hours together we could not get upon deck, but had to remain below in the small bleak, comfortless cabin. Here there was nothing for it but to wile away the time as best we might. We talked "*de omnibus rebus, et quibusdam aliis*," we laughed, we sang, and we—SMOKED, a habit, be it remarked incidentally, so constant and universal here, that the *Pebete* with its glowing top is constantly circulating from hand to hand. This is a sort of tinder in the shape of small thin rods, a cubit long, which is prepared in China from a mixture of fine dried saw-dust, fir, and clay, and forms a by no means insignificant article of commerce, the greater part coming from Macao.* A chest of eight cubic feet, filled with *Pebete* or "joss-sticks," as the English call this tinder, the use of which pervades the entire Malay Archipelago as far as Madras, costs from 10*s.* to 16*s.* 6*d.* sterling.

* These joss-sticks, by the Chinese called "shi-shin-hiang," burn, when lighted, so slowly and regularly, that the Chinese often use them to mark the divisions of time.

By 11 P. M. we had got back to Manila. The weather had cleared up somewhat, the rain had ceased, and the city and environs were gay with the gleam of innumerable variegated lamps, intended to represent the illuminations expressive of the joy of the people at the birth of a prince of the Asturias. This did not however continue long; the enthusiasm that was finding vent through the glitter of the lamps was drowned in another deluge of rain, and as the exhibition had now lasted for several nights in succession, people at last had got weary of the trouble of constantly relighting them; the gaudy triumphal arches were decomposed into their constituent atoms—rough boards, wooden pegs, nails, and filthy little oil-lamps.

The continuance of the wet weather put more distant excursions out of the question. We had to content ourselves with having seen all that was really worth seeing in the city and environs during our limited stay.

Many additional visits were paid to the interior of the city, to the fort, to the monasteries, and the various public institutions. Of these latter, two call for a more particular notice: the "*Biblioteca Militar*," and the immense hospital of San Juan de Dios, under the charge of the Charitable Friars.

The attraction of the Military Library, which is situated in one portion of the cloister of the Jesuits which had been almost entirely destroyed* by a former earthquake, consisted

* The church was utterly ruined, and a large portion of the buildings are similarly

far less in its bibliographic treasures, than in a small collection of objects illustrative of natural history, of which the first beginning had been made but a few months before our arrival. It deserves the more notice that it was not the project of a professed naturalist, but solely of an "aficimado," or friend to scientific inquiry, Colonel Miguel Creus. Although very deficient, still the bare experiment has paved the way to a better and more complete collection, which at present comprises, besides about 100 species of birds and a few mammalia, a number of objects illustrative of ethnography, geological specimens, and the various manufactures and natural products of the Archipelago (among which are 37 species of rice). Considering the natural resources of this Archipelago, (some of which, especially the Conchylia,* far surpass in richness of colour, beauty, and gracefulness of form anything that has yet been met with in any part of the globe,) the inauguration of this small collection may yet prove the foundation of one of the most magnificent and marvellous museums of natural history, provided the laudable intention

in a most desolate, neglected condition. A hope was however expressed that in the following year, 1859, members of the Society of Jesus would come from Europe to settle in the Philippines, who would include among their other labours that of rebuilding their own cloister.

* The graceful elegance of the Conchylia brought from Manila is so remarkable that an English ship captain, who, without a special knowledge of the matter, brought on speculation a freight of mussels from the Philippines to Europe, not only made by their sale an enormous profit, but even attained in consequence to a certain degree of celebrity in the scientific world!

of the founder receive adequate support, and the work, commenced as a labour of love, be continued and promoted with energy and perseverance.*

The great Civil Hospital, to which Dr. Fullerton, a Scotchman settled in Manila, was so kind as to accompany us, is a very extensive range of buildings, with large airy rooms, but so unclean and ill-kept, that it is no wonder if the report be true, that many natives in bad health prefer to run the chance of death without, to being brought to this infirmary. Indeed most of the rooms are empty and unoccupied, there being in the whole building but 30 confined to their beds, which in a city of not less than 130,000 souls, with but *one* hospital, is at all events a remarkable phenomenon. Every year on St. John's day the brethren of the order give a fête, when all the different rooms are scoured, swept, and garnished, and the sick in the hospital are present at the festivities, and, unrestricted by considerations of diet, are regaled with food and wine to their heart's content. This is likewise the period at which the hospital is most extensively patronized, and not only by those actually sick, but far more by those

* Unfortunately the students of Natural Science have met with but little encouragement or support from Government, and many parts of the interior still remain a sealed book to them, or are only accessible under great difficulties. The deficiency of definite information respecting the island attracts foreign naturalists thither, and of late there have been exploring it, M. M. Feodor Jagor of Berlin, Dr. Karl Semper of Hamburg, and La Porte of Paris, all intent on matters connected with the natural history of this Archipelago, but the majority of such visitants come back discontented and thoroughly undeceived to land, where all activity of scientific inquiry is allowed reluctantly, and regarded by the Government and the priests with an envious eye.

who qualify for a residence in the hospital by a too great devotion to the plentiful viands provided on St. John's day. When the English were in possession of Manila during the Seven Years' War, this range of buildings was used as a barrack, for which reason the church was considered as descerated for 90 years, and only in 1857 consecrated once more as a temple of God.

There is also in the *Calle de Hospicio* a Military Hospital, somewhat better kept, and not like the former under the charge of a brotherhood, but of a medical staff. Unfortunately the arrangements here leave very much to be desired. The rooms, insufficiently ventilated, are in the immediate vicinity of the kitchen, the smoke and odours from which cannot but be very prejudicial to the patients. In the various wards there were about 150 to 200 sick, whose lot called for redoubled sympathy, considering the little attention paid them.

Unfortunately no opportunity presented itself during our stay at Manila of witnessing any of those processions of the Church, which are necessarily so frequent in the course of the year. This was the more to be regretted, as we were told of many peculiarities of these costly processions. Here apparently, as in the earlier dependencies of Spain, in Central and Southern America, the Roman Catholic ritual has become mingled in the most extraordinary manner with ceremonies borrowed from paganism. The earliest Spanish missionaries were especially prone to believe that by retaining some of

the former ceremonies they would facilitate the work of conversion, and increase the number of neophytes. They saw no scandal in the native, attired sometimes as a giant twelve feet high, sometimes as a Malay warrior, sometimes as an aboriginal savage, fantastically painted, and accoutred with bow and arrow, in a word, in all sorts of masquerading costume, frolicking in the very midst of the sacred procession, and performing all manner of buffoonery in front of the life-sized and gaily-adorned images of saints ; but appeared rather to contemplate with pleasure that these wild beings, who had resisted the Spaniards on their first arrival on the island, were now subjected to the Holy Church, and rejoiced in her service! There are also numbers of natives dressed up as animals, and girls gaily decorated with flowers and in robes of spotless white, as also a fantastically-attired jester, who from time to time gives national dances and sings national songs, to the best of his ability, all in one long procession, accompanied by monks singing chorals and carrying wax tapers, while a promiscuous crowd of the faithful bring up the rear.

The sight of such processions have anything but an edifying influence upon a European, but on the mind of the masses they seem to make a deep impression, and for weeks after, when smoking a cigarette in the privacy of the family circle, they will talk of the splendour of such solemnities, and the motley episodes that accompanied it. If it were admissible to judge of the religious mind of a people by their out-

ward observances, the Tagalese would be the most devout race in the world. Wherever the natives come in contact with the Church, they put on an extraordinary stern and reverential deportment, and even in the most trivial matters the great influence of the priesthood upon the masses becomes abundantly apparent. This is the most conspicuous every evening as the clock tolls for the Ave Maria. The tones work like enchantment upon the people at whatever distance they may be audible, and for a few moments a profound silence succeeds to the noise and bustle. The labourer and the promenader, the ladies and gentlemen of the upper ranks in their elegant carriages, as well as the poor Tagale returning homeward from his hard day's work, and driving his laden mule before him, are for the space of an instant awed by the solemn sounds. All vehicles stop suddenly short, the gentlemen and servants uncover their heads, the restless masses stand as though nailed to the ground, and then sink gradually on their knees in prayer, their heads bared and their cigars extinguished; no one would venture to break in upon the universal stillness so long as the bell continues to toll. But as soon as it is silent, each jumps to his feet, and proceeds on again, believing he may now in safety give way to his frolicsomeness and pursue his pleasures.

Life in Manila during the dry season was described to us as exceedingly agreeable and gay. Then almost every evening joyous groups thread the city singing and joking, while from every hut resounds some snatch of melody

accompanied by the guitar. We had a slight foretaste of the joviality which must prevail in Manila during the delicious summer evenings from the joyous disposition manifested by the various Tagal families, even during the wèt season, when the almost incessant rain, and the swampy state of the streets, compelled the natives to remain crowded in the narrow rooms of their poor little huts. In St. Miguel, a hamlet in the immediate neighbourhood of Manila, with a number of country-seats of wealthy foreigners and natives, we repeatedly heard the sweet plaintive notes of the native women singing Tagal ditties, which for pathos and thrilling tenderness surpassed all we had hitherto heard or read of the talents of the coloured races for song and melody. We shall be able in the Appendix to give the notes of a very characteristic melody, the words of which form a very favourite popular song (Condiman), which we ultimately succeeded in taking down through the kindness of Señor Balthasar Girandier of Manila.

It was at San Miguel that we had not alone the most agreeable, but also the most melancholy, experience of our entire stay in the capital of the Philippines. On an island opposite the handsome, beautifully situate residence of our hospitable friend Mr. Steffan, the Bremen Consul, is the Poor-house, in which the insane as well as the sick are confined together, the whole being, like all the other humane institutions of Manila, under the superintendence of an ecclesiastic, in the present case a Mestizo. It appeared there was no proper or

regular medical attendance. Without assistance, or any one responsible for their proper care, these miserable beings, left in an indescribably desolate and neglected condition, cower down upon the bare stone floor in the damp, filthy rooms, staring vacantly before them, or slink about among the cool corridors, murmuring unintelligibly to themselves. The padre, habituated to such a state of matters, seems never to give it a moment's thought, but rather to make it his amusement to conduct strangers through the dismal, horrible wards, where at each step one encounters some fresh form of misery. We felt most pity at the sight of a female, whose features and whole appearance spoke of a happier lot in by-gone days. It seemed a mystery crying aloud for reparation, that this unhappy being, an orphan, worthy of all compassion, should for a slight attack of melancholy be liable to be sent to the asylum for the insane by her unscrupulous relations, that they might with the greater security possess themselves of her property. So deep and so permanent was the impression made by this melancholy spectacle, that even now, after the lapse of years of varied experience, since our visit to the lunatic asylum of Manila, the ill-fated being, with her wan yet striking features, her large, melancholy black eyes, and her wavy, shining black hair, her dress neglected and half torn into pieces, stands out life-like before us, as an embodiment of misery.

Early on the day on which we bade adieu to Manila we found an opportunity of seeing a live boa-constrictor, said

to be 48 feet long and seven inches thick, at the house of a secular ecclesiastic in the suburb of Santa Cruz. This gigantic reptile had been confined for 32 years in a large wooden cage, where it had enjoyed such a carefully tended existence that it had fairly outlived the good padre, and was now for sale by his heirs. The indolent animal, constantly lying almost motionless among the sand, is fed only once in every four weeks, when it is usually presented with a young pig.

On the 24th of June the members of our Expedition went on board the small steamer plying to Cavite, where lay the frigate, on board which all necessary preparations had been made. Now, on the eve of departure, almost every one of our number mourned the disappointment of cherished expectations. The inclemency of the weather had not alone precluded our undertaking the more distant excursions which would have repaid our researches in the natural history of the islands, but had even interposed serious obstacles to our wanderings in the immediate neighbourhood; moreover, up to the very moment of our departure the Government manifested the utmost indifference to the objects of the Expedition, while even the educated portion of the Spanish residents never took the slightest notice. The more reason therefore is it, under such circumstances, that we should not be unmindful of the few, such as Messrs. Steffan, Schmidt, Wegener, Wood, Fullerton, Fonseca, Girandier, and Creus, who, with warm interest in our plans, furnished us with

new material relating to the Philippines and their inhabitants, and left us with the agreeable prospect of a permanent exchange of literary and scientific labours.

At one A.M. of the 25th June we weighed anchor in the harbour of Cavite, on our voyage to the Empire of China. The land breeze, which sets in regularly every night, carried us clear out of the Bay of Manila, but in the open sea outside we found, contrary to expectation, instead of the S.W. monsoon, light variable winds and calms, which materially interfered with our progress. At last, when we were about mid-way across the China Sea, we fell in with the long-looked for S.W. wind, which speedily wafted us to the next station we were to visit, the British colony of Hong-kong, or Victoria. With favourable winds the voyage from Manila to Hong-kong, a distance of about 700 nautical miles, is four or five days' sail; owing to the constant contrary winds we were double that time.

Already, before we came in sight of land, a Chinese fishing vessel had put a pilot on board in the shape of a long-tailed son of the Celestial Empire, who jabbered English in a fashion to set the hair on end, and was lost in wonder at our flag, which he had never before seen. We afterwards found that the dialect used by our pilot was what is called Canton-English, such as is spoken by all Chinese who have dealings with the British, and consisting exclusively of a most ludicrous distortion of the commonest English phrases.

About noon on the 4th July we sighted the Chinese coast;

and before sundown we had passed the Lemmas islands, and found ourselves in the island-studded, many-bayed archipelago at the mouth of the Canton River, where the English have selected Hong-kong, with its admirable harbour, for the site of their colony. Thousands of fishing-boats covered the surface of the ocean all around us, always sailing parallel with each other, in fact, quite a fleet of fishermen, who, on a favourable opportunity, add a little buccaneering, and have numerous secure retreats among the thousands of coves all around, so that even up to the present day they can carry on almost unpunished their piratical attempts upon their own fellow-countrymen, as well as upon foreigners ignorant of their danger. It was the first time we had seen in any numbers the Chinese Junk, with its strange-looking rigging. On most of these small but clumsy vessels there was cut or painted on either side of the forecastle a huge eye, as though the crew were anxious to increase the power of vision of their vessel, so that it might more readily pick its way through the numerous dangerous reefs and coral banks. On the other hand the superstitious sea-faring Chinese sometimes veil and cover up the eyes of their vessels, in order that they should not behold certain strange things passing by, as, for instance, a dead body, or an approaching thunder-storm, and not be frightened by them.*

The nearer we approached the coast, the more was our

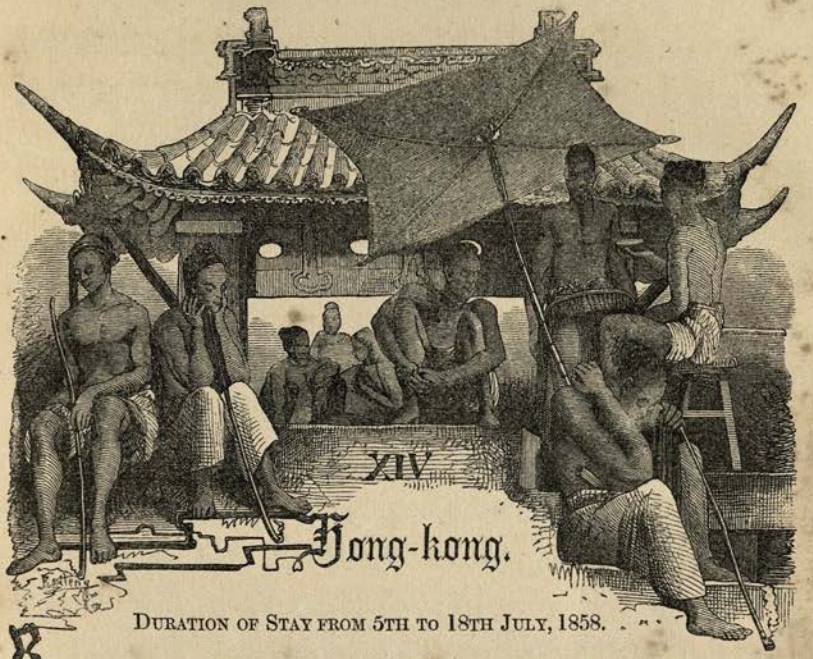
* A Chinese sailor, on being asked why his vessel had an eye painted on its bulwark, replied in Canton-English, "Suppose no hab eye, how can see?"

gaze rivetted by a landscape of the most imposing character, and now not owing to the attitude of the hills (for the highest peak is only 3000 feet), but to the grandeur of their form and their contour. Here are sharp, needle-shaped pinnacles, their steep rocky cones reminding one of the Sugar Loaf at Rio, and then round shoulders of hills, and far-extending ranges, penetrated by deep defiles, all nearly perpendicular, and without any extent of level land, and rising sheer out of the sea. These mountain-ranges are almost entirely naked, or covered only with a scanty grass or bush vegetation: no tree, no forest hides the majestic groups of rocks and stones, and when the setting sun picked out with dark, well-defined shadows the sharp outline of the granite rock, it was as though there lay before us a "bit" of the Swiss Alps, bathed in the sea as far as the limit of forest-vegetation, and our sailors contemplated with redoubled enjoyment a scene which reminded them of their native Dalmatia.

As the night was dark, with neither moonlight nor lighthouse (of which latter there is unfortunately an utter lack here), we could not venture to wind our way through the narrow channel into the harbour of Hong-kong, on the north side of the island, and we anchored therefore about 9 P.M. on the west side, in the Lemmas Channel; and with the first beams of the sun, on the morning of the 5th July, we stood in to the enchanting harbour of Hong-kong. Where the previous day we could descry from seaward hardly any traces of human activity in the hills and rocks along the coast,

so that the land seemed desolate and deserted, there now smiled upon us, as we doubled Green Island, the city of Victoria, rising amphitheatre-like; and, lying invitingly before us, its harbour, all alive with numbers of stately ships and steamers, looking like an inland lake,—in fact, entirely land-locked. Several old ships of the line, which the English use as hospitals and coal depôts, filled the back-ground, among which was the Royal Charlotte, 130 guns, the first three-decker that has passed the Equator.

At 10 A.M. we cast anchor directly opposite the town; and amid the flags of England, America, France, Holland, and Russia, there now flaunted proudly forth the flag of Austria!



XIV

Hong-kong.

DURATION OF STAY FROM 5TH TO 18TH JULY, 1858.

Rapid increase of the colony of Victoria or Hong-kong.—Disagreeables.—Public character.—The Comprador, or "fac-totum."—A Chinese fortune-teller.—Curiosity-stalls.—The To-stone.—Pictures on so-called rice-paper.—Canton English.—Notices on the Chinese language and mode of writing.—Manufacture of ink.—Hospitality of German missionaries.—The custom of exposing and murdering female children.—Method of dwarfing the female foot.—Sir John Bowring.—Branch Institute of the Royal Asiatic Society.—An ecclesiastical dignitary on the study of natural sciences.—The Chinese in the East Indies.—Green indigo or Lu-Kao.—Kind reception by German countrymen.—Anthropometrical measurements.—Ramble to Little Hong-kong.—Excursion to Canton on board H. M. gunboat Algerine.—A day at the English head-quarters.—The Treaty of Tien-Tsin.—Visit to the Portuguese settlement of Macao.—Herr von Carlowitz.—Camoens' Grotto.—Church for Protestants.—Pagoda Makok.—Dr. Kane.—Present position of the colony.—Slave-trade revived under the name of Chinese emigration.—Excursions round Macao.—The Isthmus.—Chinese graves.—Praya Granite.—A Chinese physician.—Singing stones.—Departure.—Gutzlaff's Island.—Voyage to the Yang-tse-Kiang.—Wusung.—Arrival at Shanghai.

VICTORIA, the name by which the settlement situate on the north side of the island of Hong-kong is known in official

documents, strongly recalls another renowned British possession, Gibraltar. A mere uninviting granite rock of about 9 miles in length, 8 in breadth, and 26 in circumference, Hong-kong, situate as it is at the mouth of the Canton River, is one of the best harbours in the Chinese Empire. Owing to the barren, treeless surface, which consists for the most part of chains of hills, the highest point of which is 1825 feet above sea-level, with narrow valleys between, and a small extent of level ground around the bay, hardly a twentieth part of its surface is adapted to agriculture. The modern cheerful town, thoroughly European in character, has within these few years rapidly attained large dimensions, and its numerous palatial structures speak volumes for the wealth and prosperity of the residents. The buildings of the colony rise terrace-like one above another, and extend in rows all along the steep slope of the granite, for a distance of nearly three miles. Besides the population inhabiting the town, many thousand Chinese of the very lowest class with their wives and children live here in small boats year after year, so that the total population of the island amounts to about 80,000 souls.

Twenty years back Hong-kong was but an insignificant place. Only since the peace of Nangking in 1842, which shook to its foundation the exclusive system till then prevalent, and among other important advantages secured the island of Hong-kong to the English, besides bringing into the community of nations the huge unwieldy empire with its

400,000,000, occupying 78 degrees of longitude and 38 of latitude, has it been developed into the most important business centre of China. It became an emporium for all European manufactures, as well as for all produce from the interior, which is shipped hence to the various marts of the world. Unfortunately the period at which the flag of the great Mandjing, or Double Eagle, as the Chinese call Austria, was for the first time unfurled on the shores of the Celestial Kingdom proved most unsuitable for scientific observation. While in the interior a variety of circumstances seriously threatened the stability of the throne of the reigning dynasty, the flames of war were once more breaking out along the coast also, and adding to the confusion and distress of the Chinese diplomatists. In the present war the English were for the first time in these waters fighting side by side with the French, while the Russians and North Americans were cautiously maintaining an observant, but none the less on that account menacing attitude. The hatred and animosity of the Chinese populace, stirred up by their own authorities, was continually goaded to increasing fury with each new victory of the "red-haired barbarians." The Chinese bakers in Hong-kong had devised the cruel expedient of poisoning the bread purchased by the English, and thus avenging themselves on the foe more fatally and more certainly than by Chinese weapons. Even while walking in the neighbourhood one's life was not safe, and even the usually not very easily terrified Englishman was now begirt with "revolvers," when

he rode forth of an afternoon with his wife, or was taken in a sedan chair to a friend's house of an evening.

Shortly before our arrival, the captain of a merchantman, while taking a walk outside the city, was set upon by some Chinese, robbed, and so severely maltreated that he expired of the injuries he received. So too the clerk of a mercantile house had been picked up just outside the city weltering in his blood and pierced with a number of wounds from a dagger, the murderer in this case also evading detection. An attempt was even made against the life of the Governor, Sir John Bowring, which was only frustrated through the vigilance of the sentinel, who discharged his piece at the scoundrels just as, favoured by night, they were stealing over the walls of the Government-house, with the view of creeping through the garden as far as Sir John's cabinet.

Even in the most ordinary domestic matters might be traced the same relentless hostility on the part of the Chinese, and the state of affairs was becoming every day more intolerable to the European residents. All the domestic servants at Hong-kong are Chinese, who come hither from the nearest provinces of the mainland, in order to benefit by the rate of wages paid by the "foreign barbarian." The Chinese officials, vying with each other in every possible method of showing their implacable hatred to the strangers and to embitter their life in China, now issued an order to all the Chinese resident in Hong-kong to quit the island and

return to their native country. This ordinance would assuredly have been disregarded by most of the resident Chinese of the Middle Empire, had not any violation of the Imperial rescripts been visited with such appalling consequences. For by the Draconic laws of the Empire, the family of the criminal expiate his offence, should he take to flight and get beyond the reach of the arm of Chinese justice. For any such absentee from justice, some other member of the family is substituted, who may be still on the spot; as for instance, the father, mother, or brother, who is punished exactly as though he had in person been guilty of the crime or misdemeanour. With such terrific means of repressing disobedience impending over him, no Chinese would venture to set at defiance the orders of the Mandarins; and accordingly, during the summer of 1858, 10,000 Chinese returned home at once; others, who did not dare to return, but could not endure that the ruthless doom should be executed upon their relatives, committed suicide. The position of European ladies in Hong-kong became anything but enviable, as they had at a moment's notice to take up the pot-ladle for themselves, and get through the various fatiguing details of their households with what skill they could. Moreover there was good ground for apprehension that the Mandarins might cut off all communications with the neighbouring provinces, which move, as the greater part of the every-day necessaries of life are supplied from the mainland, might have exposed the population of Hong-kong to the severest straits.

Under these circumstances any more remote excursions, or visits to the adjacent mainland, were of course impossible. We had to confine our investigations to the island itself, there to collect what memoranda we could, and see as much of the island and its inhabitants as the shortness of our stay and the prevailing disorders might admit.

Life in Hong-kong has already a strong leaven of western civilization. Only in the narrowest streets does the visitor come upon examples of the genuine Chinese type. Most of the natives even inhabit houses built in the European style, so that one feels as though in a European city inhabited by a Chinese population, the latter having however greatly altered from its originality. Only very few types of Chinese popular life are met with in this English colony. Of these characters the most interesting and unique is the *Comprador* (*Mai-pau*), a sort of factotum, whom no household can dispense with, and whose importance only those can adequately do justice to who have lived some time in the country. The Comprador, or *shroff*, is the soul, the good or evil genius, of the house: he sees to all sorts of purchases, manages the domestic economy, and maintains order and discipline in the house and household. The entire domestic control is exclusively lodged in his hands, to that extent that even the master and mistress of the house may not, without consulting the Comprador, dismiss one of the servants or engage a new one. For all that goes on, the latter is responsible. He has to answer for the honesty of

the servants, and must replace anything that may have gone amissing from the house inventory. If the family leave their house for any time, the Comprador is informed of the place where the most valuable articles are deposited, where they are more likely to be found in proper order on their return than by any other device. Even during the late war, in which the feeling of the Chinese to the Europeans was anything but friendly, the Comprador held to his fidelity, and was as useful as ever. In view of the actual state of matters, a traveller must feel no little astonishment at beholding the doors and windows of the private dwelling-houses everywhere wide open, and valuable articles lying exposed in the various apartments. As however the Comprador himself must get a number of bails to become responsible for him, and as the post is a very profitable one, it follows that there are but few cases of dishonesty in this singular profession. It is especially remarkable that few of the populace seem to be as hostile to the strangers as the Mandarins, and all the numerous annoyances inflicted on the latter are invariably to be traced to the intrigues of the Chinese authorities. How else would it be possible for a couple of hundred Europeans to rule a colony in which are 80,000 Chinese, and which moreover is dependent upon the mainland for the very first necessities of life?

The Comprador receives for all his services and attentions no higher pay than from 12 to 15 dollars a month, besides support for himself and family. This however is not his

sole income, as every tradesman must give the Comprador a per-centage upon everything, even the most insignificant article that enters the house, and this custom even extends to any purchases made by a Chinese in the warehouses of the foreign merchant.

Another "public character," whom one frequently meets in the lower parts of the city in the public streets of the Chinese quarter, is the "soothsayer." On a small table before him stands an open draught-board with a number of squares, on which are inscribed a variety of proverbs and oracular sayings. In each square is a grain of rice, and quite close to the board is a bird-cage with a tame canary. Presently some good-humoured gaping rustic comes up, who wishes to learn his destiny, upon which the soothsayer suffers the canary to hop out of his cage upon one of the squares, and pick up a grain of rice *ad libitum*. The sentences and interpretations, which are inscribed on each square from which the canary snaps up his food serve for a reply and decision to the curious questioner, who hands over a small *honorarium*. The apparatus is simple and ingenious, but the proverbs are excessively silly, and recall much less the land of Confucius than the dream-books of certain countries standing high in European civilization.

The stores which seem most to attract the attention of a stranger are the "Curiosity-shops," in which are heaped up those innumerable articles of Chinese industry and Chinese taste which are so characteristic of the country and its

inhabitants. Here the eye rests upon objects of the most bizarre shapes, which in material, design and execution are totally unlike anything the European sees elsewhere; workmanship in wood and stone, that illustrates in a remarkable manner the extraordinary patience of the artisan, such as drinking-cups, barrels, frames, cut all in one piece, and beautifully carved, elegant fancy articles of horn, stone, mother-of-pearl, ivory, roots of trees, metal, or wood, vases and dishes, statuettes in copper and clay, woven portraits, embroidery, &c. &c.

Among all these various manufactures, one especially remarks those prepared from a leek-green, slimy-feeling stone (nephrite), which is in much request among the Chinese, and is highly valued. The Chinese name, Yo, from which in all probability is derived the French name *Jade*, does not indicate however a peculiar species, but is used for all sorts of carved stone-work and gems, while the most valuable one is called by the Chinese the "mutton-fat" stone. The articles prepared of what is named steatite, or soap-stone, are largely used in commerce, but are of very small value, and usually cut only in very clumsy figures.

But these manufactures make much less impression upon the stranger than the beautiful pictures of the Chinese artists upon rice-paper, a peculiar branch of art, cultivated by the Chinese alone, and which as yet has never been successfully imitated in any other country. The most exquisite specimens of these are sent to Canton, but among the Chinese in Hong-kong we

saw several beautiful works in this style of painting. The common designation of rice-paper has led to the erroneous idea that the substance of which these pictures are made is manufactured from the leaves of the rice-plant, whereas it is prepared from the pith of an entirely different plant (*Aralia papyrifera*), which grows in Funan and Tukun. The marrow is steeped for some time in water, after which it is split by means of very keen sharp knives into thin leaves, which are then subjected to gentle pressure. The largest are about a foot square, and are reserved almost exclusively for pictures, the shreds and inferior sorts alone being used for the manufacture of artificial flowers. We saw portraits of the Emperor and Empress, of the rebel leader, Tai-ping, of the notorious Yeh, ex-governor of Canton, and other well-known or conspicuous personages. Latterly there has sprung up a strong tendency among the Chinese artists to daguerreotypes and photographs in miniature upon ivory; and in the *ateliers* of Hong-kong a number of artists were engaged in this, at present the most profitable branch of Chinese artistic skill.

In all these shops the medium of trade is what is called Canton English, less a dialect than a confused jargon of English and Chinese words, consisting of concessions made on either side to the grammar and idiom of the other, so as the more readily to comprehend each other. A few Spanish and Portuguese words have also crept in, recalling the former relations of these countries with China. All English words ending in *e* mute have in this gibberish an *i* attached to

them, as also all other words whatever. Thus they say *timi*, *housi*, *pieci*, *coachi*, *cooki*, &c. &c. There are certain Chinese, especially in Canton, who pick up a living by initiating young country folks, who are about entering service in English mercantile houses, in this singular language. Curious and unpleasant as this Chinese English dialect sounds in the ears of strangers, it is found greatly to facilitate intercourse with the Chinese, in consequence of the immense difficulties attending the study of Chinese, so that most Europeans find it far more comfortable to master this jargon, which is not without some influence on the spread of English in the chief commercial cities, than to occupy themselves with mastering Chinese. The language spoken by the sons of the "middle kingdom" consists of 450 monosyllabic sounds, which by various delicate differences in accentuation may increase to about 1600. The slight, and to unaccustomed ears almost inappreciable, shades of aspiration and accentuation, are the main difficulty in the way of foreigners desirous of learning the Chinese language.

To learn the written characters is equally arduous, and requires not less time and perseverance; for this does not consist of a number of letters, the varying arrangement of which constitutes words, but of 40,000 more or less complicated signs, each of which expresses a whole word. They are rude forms, representing most imperfectly ideas and material objects;* however, the knowledge of 4000 to 6000 such signs,

* The analysis of these hieroglyphics, by which abstract ideas are sought to be

with their various significations, suffices to understand most of the common Chinese books. These singular hieroglyphics are not written horizontally but vertically. Moreover, the Chinese begin from the right side, so that, directly the reverse of the European custom, the title of a Chinese book is found on the first page, the leaf furthest to the right hand. Long ago, the Chinese, like most other Asiatic nations at the present day, wrote with metal *styli* upon split leaves of bamboo. Ever since the third century before Christ, however, when the art was invented of making paper from the rind of the mulberry tree and the bamboo cane, and preparing pin-soot, glair, musk, glue, Indian-ink* (méh), and other sub-

expressed, is extremely interesting. Thus a heart with the badge of slavery over it represents "anger;" a hand, and the sign for the middle, signifies an "historian," because it is his duty not to lean to either side; by the sign of uprightness and motion is represented "government," because it must always observe probity in the transaction of affairs; to indicate the idea of a "friend" two pearls are represented side by side, because friendship is as rare as two pearls, exactly resembling each other! The well-known French missionary Huc, in his valuable work on the Chinese Empire, gives a variety of most interesting particulars respecting the Chinese language.

* A very abstruse treatise upon the preparation of the Chinese ink is contained in the important labours of the Russian Embassy at Pekin, relating to China, published in German by Dr. Abel and Mecklenburg, Berlin, F. Heinike, 1858, vol. ii. p. 481. The information is borrowed from a small treatise which was written in 1398 by a certain Scheu-zsi-Sun, who had been for thirty years engaged in the fabrication of the India ink. The author therein mentions how, after he had tried every known method, and every substance usually employed, without attaining any result, he at last put them all on one side, mingling only pin-soot with glue together, and diluting this mixture with but hot water, again kneaded it thoroughly, and thus succeeded in getting an ink "black and lustrous as a child's eyes." According to another method, India ink is prepared, besides pin-soot and lime, of a sort of tincture, consisting of the following various pigments,—pomegranate-rind, sandal-wood, sulphate of iron and copper, gamboge, cinnobar, dragon's-blood, gold-leaf, musk, and glair. This tint is said to be remarkable for preventing the glue from getting spoiled

stances, the pencil has taken the place of the graver. The hieroglyphics now made on paper are softer, more elegant, and in distinctness of outline admit greater varieties of form. Most of the Chinese whom we saw engaged in writing formed the most complicated characters with great celerity and ease upon the thin paper, and without the firm strokes losing anything of their neatness and clearness of outline.

Among the various scientific objects recommended as important objects of inquiry to the members of the Expedition, during their visit to China, by the renowned sinologue Dr. Pfitzmaier, was the obtaining of rare Chinese books, and the elucidation of certain ethnographic and linguistic questions. Whatever was achieved by us in throwing light upon these matters is due in great measure to the cordial reception with which we were received by men of science resident at Hong-kong. Especially we would name in this respect Dr. M. Lobscheid, a German by birth, a missionary and inspector of schools, who, thoroughly conversant with the Chinese language, exerted himself to the utmost in forwarding the objects of the scientific corps, besides assisting us in the purchase of a variety of the most valuable Chinese works, and giving us much interesting information respecting the country and the inhabitants. Dr. Lobscheid

by age, or the colour changing, and may be thus kept for any length of time. ½ lb. of glue and ¼ lb. of this colouring matter are the proportions for one pound of pin-soot. However, only a very small portion of the different materials used seems to possess the power ascribed to them, and many are used out of mere prejudice, and not at all to the advantage of the ink prepared.

himself has a well-selected, valuable, and extensive library of rare Chinese works on geography, natural science, history, philology, and numismatics, and presented a number of valuable gifts to the Expedition. One of his colleagues, Dr. Ph. Winnes, also a German, and a missionary from the Mission Society of Bâle, compiled for us a list of words of the Hakka dialect, as spoken in the interior of the province of Quang-Tung, hitherto so little known philologically. It is indeed astonishing what English, and German, and American missionaries have effected as publicists, during the short period they have been resident here. The educational and religious works published in Chinese at the expense of the various religious societies form already quite a respectable literature of themselves, although the Chinese language puts as many obstacles in the way of mere Christian civilization as in that of the propagation of the Evangile itself. Most of the missionaries consider any attempt to substitute Romish for Chinese characters as being quite vain. The indistinctness of Chinese signs has already been fruitful of much controversy among the missionaries themselves. Thus, for example, those engaged in promulgating the Christian faith are not as yet agreed by what Chinese word the God of Christianity may best be indicated. The Roman Catholic missionaries write *Tientschù* (the Highest of all things); the English and German Protestants use the sign *Schang-Ti* (the Most High); the American Protestants make use of the word *Schin* (Spirit). These varieties of opinion as to the mode of

expressing the idea of "God," have given rise to a vast number of publications, which however have unfortunately tended rather to envenom the dispute than smooth the way to a common understanding.

Conspicuous, however, as are the services of the missionaries in the publication and diffusion of useful and moral books in the Chinese language, their direct efforts have, on the other hand, been attended with but limited results hitherto, and although it is always laid down as an axiom in the books and manifestoes of the Tai-Ping insurgents, that the doctrines of Christianity, as deduced from the writings of the Missionary Societies, are the leading principle of the movement, yet, as set forth and promulgated by the insurgent chiefs, they cannot be said to deserve recognition by any known form of Christianity.

As in their religion, so in their mode of life, and their national customs, the Chinese remain stiff-necked and obstinate, and in this direction also Christianity is in but few cases capable of mitigating their frequently barbarous customs. Children in China are constantly exposed in large numbers, and that not owing to poverty, but from indifference to the female children. One Chinese woman who at present professes Christianity, and is a member of the Bâle missionary community, has herself killed eight female children whom she had herself carried in her womb! Dr. Lobscheid informed us that he was personally cognizant of

one case, where a Chinese mother-in-law, irritated at the birth of a female child, murdered it before its mother's eyes, almost immediately after it had come into the world, and this in a rather well-to-do family! Young mothers often lay their children down in the open field, or on the sea-beach, watching anxiously if any one takes it away, or till a wave mercifully sweeps it off. One such infant, accidentally found by some of the crew of the English frigate *Nankin*, and tended with all the tender-heartedness of Jack when he finds an object of compassion, is at present in the German Mission House at Hong-kong, and was baptized in the cathedral by the chaplain of the frigate, who gave her the name of Victoria Nankin. Other mothers endeavour to choke the new-born girl with moistened ashes, which, not unfrequently with caressing hand, they lay upon the mouth of the little unconscious innocent. Male children, on the other hand, even such as are crippled or deformed, are very seldom, indeed quite exceptionally, exposed or put to death. In proportion to the harsh treatment which the female offspring experience, is the pride and anxious carefulness which wait on the male children. Indeed the Chinese are very much in the habit of having several wives, simply because by so doing they of course have a better chance of a number of male offspring, and it very frequently happens that the lawful wife of a Chinaman, if she has continued any length of time childless, will even seek out and bring to her husband a concubine by whom he may have heirs, that is,

*sons.** In such cases the two wives usually continue on the best of terms, which cannot be said of those instances where the second or third wife is introduced into the family by the husband, without the intervention of his wife. According to the old Chinese law, the man had to be thirty, the woman twenty, before marriage. At present marriages, as a rule, are made between sixteen and twenty years of age. It may be assumed that one in every fifteen Chinese has more than one wife; the first, usually known as "number one," is generally taken from inclination, whereas the rest are usually bought, the price varying, according to their youth and beauty, from 100 to 600 dollars. This custom gives rise to quite a peculiar trade. Chinese women make a practice of purchasing for themselves from the poorer classes such of the female children as are of good health and well-formed, whom they bring up with great care, with the view of selling them, when grown up, to the wealthy Chinese, and even sometimes to—European residents.† The custom of child-murder is most prevalent in the coast districts of the province of Fo-kien, so that latterly there was a positive scarcity of women, and marriageable girls had to be imported from the northern part of the province. The prevalence of this custom of child-murder in these localities is to be ascribed to the enormous migration of the male population to Siam, to the islands

* This custom is of remote antiquity in Oriental countries, as witness the circumstances attending the birth of Ishmael, and also of several of the children of Israel.

† Many European residents at Hong-kong and Shanghai have Chinese mistresses *bought* in this way, who are bound to live with them only so long as their masters choose.

of the Malay Archipelago, and other points. These emigrants supply the labour market in foreign countries, and but seldom return to their families. Numerous placards and pamphlets, pointing out the enormity of child-murder, and dissuading from its commission, are printed annually, partly at the cost of philanthropists, partly at that of the Chinese Government, and widely diffused, yet without producing any diminution in the practice of this appalling custom.

The custom of distorting the feet of the better class of women at the period of their birth, seems to have arisen from the jealousy of the husbands, who in thus preventing the possibility of gadding about, think they have secured an additional guarantee for the fidelity and chastity of their wives. However, one occasionally hears the first introduction of this singular and cruel custom ascribed to a Chinese empress having once been born with such distortion of the feet, and that in consequence it not only became the fashion among the females of the higher class in those days, out of pure obsequiousness, to imitate by artificial means a disfiguration accidentally arising from a freak of Nature, but even to recognize it as a necessary concomitant of the Chinese ideal of beauty.

The Governor of Hong-kong, Sir John Bowring, a distinguished *savant*, who received the members of the Expedition with the utmost consideration, invited them to his house and endeavoured to bring them into personal communication with those residents in the colony most interested in scientific

pursuits, so that each one of us could consult with the gentleman best able to advise him in his own department, and thus attain in the shortest time the most satisfactory results. Sir John, moreover, as President of the China Branch of the Royal Asiatic Society, admitted the members of the Expedition to the honours of an extraordinary session. He welcomed the Austrian naturalists in the heartiest manner, and expressed the most flattering anticipations from their visit. Very deserving of remark was the speech made on this occasion by the Lord Bishop of Hong-kong. In his capacity of a dignitary of the Church, he too bade us welcome in the warmest manner, and expressed his conviction that Christianity had nothing to fear, but only to hope, from the study of natural sciences! What would certain ultramontanists, had they been present, have replied to this remark of a high ecclesiastical dignitary?—they who consider government impossible without restricting the study of the natural sciences!

Among the various subjects discussed at this meeting were several of great interest, which sufficiently evidenced what a thorough disposition to mental activity the English show, even in a place where material interests are necessarily the main objects of attention, and where they, moreover, are continually exposed to great personal danger.

One of the communications received by the Society was a memoir by Mr. W. Alabaster, who had accompanied ex-governor Yeh to Calcutta as interpreter, treating of the Chinese population there, and its influence on the state of society.

The memoir contained the very remarkable statement that the Chinese colony in Calcutta, which in 1858 counted little more than 500 souls, had not alone monopolized several employments, such as shoemakers, tailors, &c., but had, even when thousands of miles distant from home, jealously maintained several of their customs and rites intact. This Chinese community, so inconsiderable in point of mere numbers, already possesses its own temple, its own priests, and its own teachers, who guard any Chinese immigrants from the perils of proselytism; it has founded a special association, whose object it is to transmit to their native land the bodies of such as die abroad, while their luxury is beginning to develope itself to the extent of ordering from China at considerable expense troops of actors, so as even at this distance to provide themselves with the national amusement of a genuine Sing-Song. This peculiarity is of great importance, inasmuch as the emigration from China is ever assuming more extended dimensions, and already embraces several portions of the world. We find Chinese scattered throughout Eastern Asia, in Australia, in California, in Peru, in Brazil, in the West Indies, and, what is very astonishing they thrive and prosper at most places they visit, despite the not very humane treatment they receive, and the wretched, desolate state in which they leave their homes. This enormous emigration of the sons of the Flowery Land seems destined to be of immense importance, and to be fraught with momentous influence upon the future of the other Asiatic populations, whom the Chinese greatly

excel in capacity for work, mechanical dexterity, and dogged perseverance. Even the religious movement gives the Chinese certain advantages over all other nations of the Asiatic type of civilization. The Hindoo, like the Catholic, has numbers of festivals, which greatly diminish the number of his actual working days; the daily ceremonies prescribed by Brahminism further curtail the most precious hours of labour; his exclusively vegetarian food not alone prevents the proper development of his muscular power, but also by its ostentatiously morbid delicacy, brings him constantly into collision with the social order of a Christian household. The Chinese, on the other hand, keeps but one holiday-time, the beginning of the new year, which he celebrates for fourteen days without intermission. But the remaining $11\frac{1}{2}$ months of the year are for him but one long day of work. Moreover, the Chinese has no fastidious notions about his food. He eats pork, and drinks wine, and prefers fat meat to meagre fruit diet, thoroughly unrestrained by any considerations as to whether such a mode of life accords with the institutes of Brahma and Menu, or the teaching of Confucius. Their sobriety, their capacity, their industry, their frugal mode of life, and their numbers, all seem to indicate the Chinese as destined to play an important part, not alone in the development of the Oriental nations, but also in the history of mankind. They are, as a German philosopher has profoundly remarked, the Greeks and Romans of Eastern Asia, and they will, if once hurried onwards by the great tide of Christian

civilization, perform such feats as to fill even the nations of the old world with wonder and amazement.

Another communication, made during the same meeting of this meritorious branch of the Royal Asiatic Society in Hong-kong, related to that singular plant, which has within the last few years excited so much attention in industrial circles throughout Europe under the name of "Green dye," or "Vert Chinois." Notwithstanding the experiments hitherto made with this valuable dye, and the excellent use which has been made of it, more especially by the Chamber of Commerce at Lyons, the first in Europe to make application of the new colour, there was yet much to be learned respecting the mode of raising and manufacturing it, in order to render its employment entirely practicable. The elegant pamphlet of the Lyons Chamber of Commerce * had just arrived from Europe, and led to a variety of interesting investigations. Nothing was known in Hong-kong respecting the plant beyond what was already contained in Robert Fortune's excellent work and Rondot's treatise. Somewhat later, we were furnished with more accurate and circumstantial information respecting the Lu-Kao, the well-known "Green dye" of the English (a species of *Rhamnus* or buckthorn), which we shall here transcribe pretty fully.†

* The title of this work is:—"*Notices sur le vert de Chine et de la teinture en vert chez les Chinois, par Natalis Rondot, imprimé aux frais de la Chambre de Commerce de Lyon, à Paris,* 1858."

† The Chinese of Shanghai called the plant *Li-lu-schu,* and the substance obtained from it *Gah-schik.*

Lu-Kao is grown chiefly in the northern provinces, extensive plantations of this valuable plant existing in the country around Foo-Chow and the environs of the city of Haening. The valuable green dye matter is obtained, however, from the rind, not of one but of two species of *Rhamnus*, of which the "yellow" grows on the flats, the "white" on the high-grounds in a wild state. The preparation of the substance, which does not differ much in appearance from common indigo, is exceedingly primitive. Both plants are boiled for a considerable time in iron kettles, the yellow deposit or *residuum* being suffered to remain undisturbed for several days. Transferred thence into earthen vessels, a piece of cotton cloth is steeped into it five or six times, after which the adherent dye is wrung out, and exposed a second time to the process of boiling in iron pans. The next step in the manipulation consists in permitting the dye stuff, which now has much more consistence, to be soaked up by some pieces of cotton, when it is once more washed, sprinkled upon thin paper, and, lastly, exposed for some time to the sun.

The Chinese have as yet only used the dye for colouring cloths of coarse texture; all attempts hitherto to apply it to silks, &c., have proved fruitless. But the great development of chemical science in Europe justifies us in expecting that a method will ere long be devised for fixing this beautiful, durable light green tint, which does not alter even in candle-light, upon fabrics of fine smooth texture, and thus greatly enhance its value in the industrial arts. The Lu-Kao has

from time immemorial been used by the Chinese in water-colour paintings, but its use in industrial processes only dates from about 20 years back. The very price charged for the small quantities hitherto brought from China, is by no means natural, but seems to have been artificially forced up by speculation, apparently in consequence of an unusual demand. In Foo-Chow the price of one Catti, about $1\frac{3}{4}$ lbs., is 20 *Taels*, or about £6 10*s*. Were the production of this dye stuff really so expensive, we may be sure it would not be made use of by the Chinese for their ordinary stuffs, nor could these be sold as cheap as they are. We have found our opinion confirmed by competent observers in various parts of China, that this valuable product is susceptible of being acclimatized in Europe, and of being cultivated with profit, especially in those places where, together with favourable conditions of temperature and soil, the wages of labour are not too high.

Like the English authorities and Government officials, our German fellow-countrymen, resident in Hong-kong, did not fail to exercise their hospitality for the benefit of the associates of the Expedition, and we cannot sufficiently express our obligations to the Austrian Consul, Mr. G. Wiener, and the Prussian vice-consul, Mr. Gustav Oberbeck, for their delicate attention. The latter presented the Expedition with a number of articles interesting as illustrating the advances of civilization, which he had obtained during the siege of Canton, in Dec. 1857, and of which the greater part have since been deposited at the Imperial Cabinet of Antiquities at Vienna.

Through the kindness and interest of Dr. Harland (since deceased), surgeon-in-chief of the colony, some of the members of the Expedition were enabled to make corporeal measurements in the great prison, the inmates of which come from the most various parts of the empire, as well as in the hospital, upon a number of individuals of either sex, all "fair specimens of the Chinese race," as Dr. Harland assured them, the results of which will be found in the anthropological section of the *Novara* publications.

Before the frigate left Hong-kong, despite the insecurity of public affairs, several excursions were made to the south side of the island, to Canton, and to the Portuguese settlement of Macao, which proved as interesting as they were satisfactory.

In the course of their peregrinations about the mountains on the island, as far as the fishing village on the south side of the island, known as Little Hong-kong (sweet-waters), the naturalists of the Expedition were accompanied by Dr. Hance, the botanist, and the missionary, Dr. Lobscheid, both thoroughly acquainted with the Chinese language. Little as the pretty name of this small settlement, founded so far back as 1668, is applicable to the entire island, it yet corresponds well, and is eminently suitable, to the smiling valley, entirely shut in by lofty rocks, in which lies wretched Little Hong-kong. A beautiful wood filled with tufts of flowers, forming for the labours of the botanist a rich supply of the most splendid plants, and refreshed by copious springs of water from the

mountains, constitute a lovely landscape. Above the limit of vegetation of the foliage trees, are seen on the slopes of the mountain groups of pines, while the level ground at the bottom of the valley is laid out in smiling rice fields. The miserable inhabitants of the village, which looks gloomily out from among the trees, are not safe from the predatory onslaughts of ferocious pirates, even among the recesses of the valley. The streets of the village, hidden between trees, are uncommonly narrow, so that two men can scarcely pass each other, and the huts are all placed on purpose close against each other, in order, we were told, to be able more easily to admit of defence. Our rambles were rewarded with an abundant collection of specimens, and were particularly instructive in a geognostical point of view, as satisfying us that the island does not consist entirely of granite, but that a large proportion of the mountain is porphyritic.

Another excursion was made by the Commodore and some of his staff as far as Canton. The Commandant of the station, Commodore Stewart, had for this purpose placed the gunboat *Algerine* at our disposal. The distance from Hong-kong to Canton is about 87 nautical miles (100 statute miles), and the voyage took full eleven hours, viz. from 6.30 A.M. to 5.30 P.M.

Canton, the third capital of the Chinese Empire, and its most flourishing commercial city, which but a short time before had numbered about 1,000,000 inhabitants, was at this period a desolate, almost entirely abandoned mass of houses,

half in ruins, half burnt. The stately European factories, which had adorned the banks of the river up to the walls of the Chinese city, were heaps of ashes. The floating town upon the river itself, the renowned flower-boats of Canton, with their marvellous splendour and their luxurious beauty, had entirely disappeared, leaving no trace. Whoever had anything to lose had fled the country. English sentinels patrolled the walls and occupied the streets of the interior of the city, and only the very poorest of the mob remained behind, watching every opportunity of getting the "head-money," which the Mandarins of the province of Kuang-Tung had offered for every head of a "barbarian" brought in. "The state of matters in Canton gets worse and worse every day," said the latest issue of the Hong-kong journals. Since the Americans and Russians had concluded private treaties with the Imperial Government, and the English and French allied fleet had gone north to the Gulf of Pe-Cheli, to treat at Tien-Tsin with the Imperial commissioners, the Chinese of Canton had been plucking up courage. They conceived the allies to be isolated; the Russians and the Americans they held to be hostile to them. The Mandarins and Imperial commissioners launched proclamations by the dozen at the "foreign devils," * set on foot organized Guerilla bands,

* We give the following translation of one of these proclamations: "Listen, O listen, ye detestable barbarians! We, patriots and honourable subjects of the reigning dynasty, wish to hold up a mirror to you, that ye may see what ye are doing, and what like you are! Only in speech, and in no other respect, do ye differ from wild beasts! We have understanding, we observe laws and commandments; but you are

which were called "Braves," who every night discharged rockets into the city, murdered and pillaged, and kept the allied troops, who were only 3500 strong (800 of whom were in hospital) almost continually on the alert.

When the gun-boat *Algerine* arrived off Canton, the Commodore, although it was late in the evening, was accompanied by a military escort to the head-quarters of General Straubenzee, commander of the allied troops. A stillness as of a grave-yard reigned throughout the city, and not a light was to be seen. By 10.30 P.M. the Commodore reached the post, and was most hospitably received by the General. The

blind and dumb, and will not receive advice. You must—there is nothing else for it—you *must* be cut off to the very last man! . . . . . Since you first came to the MIDDLE KINGDOM, you have done all that you can to destroy us; you have shot at us from your ships; you have poisoned us with opium, you have erected devils' houses (churches) within the walls of the city! Nay more, in order to hold your horse-races, you have profaned graves, and not suffered the dead to rest in peace! Insatiable as sharks, greedy as a set of silk-worms upon a mulberry tree, the more you get the more you want. Even our most trifling profit you have taken to yourselves. Now, however, the cup is full, Heaven in its wrath has decreed your destruction,—our people shall cut you off with divine weapons of fire. Hearken now, O people, to the four following rules for the extermination of the barbarians: All barbarians must be beheaded, that our reproach may be removed, and our Middle Kingdom be no longer insulted. So runs the order of the leader!—To none other shall any disaster happen, no one shall be molested. Whoever strikes back, shall himself be struck. . . . . The day of vengeance shall be secretly appointed. We shall circumvent the barbarians with treachery, we shall fall on them unawares, and destroy them. Natives who are in the habit of attending their schools, or of serving them, or of trading with them, must leave them and return to their old pursuits. If they remain, then the subjects of the exceedingly beneficent dynasty as well as the barbarians, the diamonds and the hailstones, shall be destroyed together. . . . . After the destruction of these hideous hordes, their possessions shall be distributed among those who have distinguished themselves on the day of battle. So runs the order of the leader!"

head-quarters were situated on a hillock commanding the city, surrounded by the numerous buildings of a country-seat or *Yamun*, which had been the property of the father of Governor Yeh, who had acquired such notoriety during the recent warlike troubles. The ostentatious splendour of the apartments, the splendid ebony carved work, gave such an idea of the magnificence, the luxury, the gorgeousness of the Chinese princes, as can only be paralleled by what we read of the palaces of the emperors of ancient Rome. Yeh himself had by this time been removed from the political scene, and was a state prisoner in Calcutta, where he lived in more than monastic seclusion. To judge by his portrait, which was for sale in all the print-shops of Hong-kong, Yeh was a fine-looking man with energetic features, and an expression full of intellect, and, so far as his physical appearance went, seemed to take after his father, who in his ninety-second year was still tasting joys of paternity. In his own country, even among the Europeans, Yeh enjoys the reputation of being not only an able diplomatist, but a man of varied information as well. While at Hong-kong we were shown some large anatomical wood-cuts, which Yeh had himself borrowed from a European work on anatomy, and published at his own cost on an enlarged scale, accompanied by a preface from his pen.*

Even more extensive and elegant in its outward aspect than that of Yeh, was the palace of the Tartar general Pih-

* Yeh, as is well known, has since died in imprisonment at Calcutta.

kwei, now employed for barracks and the officers of the English and French commissariat, while a much less pretentious building had been assigned to the Tartar general for his present residence.

The Commodore had reached head-quarters and was sitting at the tea-table with General Straubenzee, when an alarm of fire was heard. The "Braves" had fired a house close by in the hope, it should seem, that the flames would catch the barracks as well as the powder depôt, or at all events compel the English to withdraw their troops from the post, and give an opportunity for inflicting some loss on them. Fortunately, however, what had been set on fire burned quite out, without fulfilling the anticipations of the "Braves."

In the course of a stroll, which our Commodore took with the General somewhat later in the night, they perceived that the Chinese kept up a continual flight of rockets against the sentries and buildings of the post, from a small eminence not two hundred yards distant, which was provided with ramparts and cannon, and the Austrian guests greatly marvelled that no energetic steps were taken to obviate the disorders produced by these guerilla bands of Chinese, who every night with their incendiarism and fire-balls kept the city, the head-quarters, and the pickets in constant alarm, seeing that their inactivity only tended to animate the courage of the Chinese, while in such harassing service, unattended as it was with any results, their own forces, already very much reduced, were proportionately weakened.

The morning after their arrival the Austrian officers, accompanied by the English commissioner Mr. Parkes, whose imprisonment near Pekin has since made his name widely and universally known, paid a visit to the sole Chinese authority still remaining in the town, the Tartar General and Mandarin, Pi-Kwei. An immense crowd had assembled in the streets through which the foreigners wended their way, and their reception by the Tartar General was accompanied by all the ceremonial of Chinese etiquette: three howitzer salvo-shots, and ear-splitting Chinese music, the General's body-guard, disarmed, drawn up on the staircase, the General himself, wearing his Mandarin cap on his head, nodding and laughing more or less to the foreigners presented, according to their higher or lower rank. The Commodore was provided with a raised seat. In the course of conversation, during which Mr. Parkes kindly acted as interpreter, tea was served. Pi-Kwei inquired as to the objects of the Expedition, and asked the names of the officers, which, owing to the symbolic nature of Chinese writing, could not be done but after much difficulty. Pi-Kwei, a man of colossal proportions, behaved and spoke like a lamb in presence of the small physically insignificant-looking Mr. Parkes. Like the regents appointed by the Dutch Government in Java, he was nothing more than the agent to carry out the orders of the English.

Our departure was not less ceremonious and noisy than our reception: a number of fire-balls were let off in front of

the building, the noise of which gave much more the impression of an infernal machine than a salute. The rest of the day the officers spent in reconnoitring various parts of the city, as far as circumstances admitted, and all returned in the evening to Hong-kong in the same gun-boat which had conveyed them to Canton.

While we were lying at anchor in Hong-kong, an extra sheet of the "*North China Herald*," published at Shanghai, brought intelligence of a treaty of peace having been signed at Tien-Tsin, by Lord Elgin, on the part of England, and the Imperial Commissioners, and that it had been dispatched to Pekin for the purpose of being ratified by the imperial autograph. This treaty, which contained 56 clauses, invested England with far more extensive rights than she had hitherto possessed. Especially it was stipulated that an English ambassador should reside in a palace at Pekin, and be accorded all the honours due to his rank, and that the Christian religion should be professed and taught without any restrictions. British subjects, provided with passes from their own consuls, to be countersigned by the local Chinese authorities, were to be permitted to traverse the empire in every direction on business or pleasure; the navigation of the Yang-tse-Kiang, or Blue River, was also declared free; and in addition to the five harbours already opened to foreign commerce by the treaty of Nankin, the English were now to be at liberty to trade with New-Chwang, Tang-Char, Tai-Wan (on the island of Formosa), Chau-Chow, and Kiung-

Chow (in Hainan), to settle in any of these, to buy and sell house property, as also to erect churches and hospitals, and lay out cemeteries. Chinese subjects guilty of crimes or offences against the English, to be punished by the native authorities in conformity with the law of the land. English subjects, on the other hand, to be subject to the jurisdiction of the British authorities, in similar circumstances, and treated according to British law. All official communications on the part of the English authorities to be drawn up in English for presentation to the Chinese Government, and although, for the present, accompanied by a translation, shall in the event of uncertainty be construed according to the text of the English original. Article L provides that the symbol 夷 "I" (Barbarian) shall be discontinued in all official documents, whether in the capital or the provinces, and the term "English" or "English Government" be substituted. On the other hand, the Treaty of Tien-Tsin is silent on the subject of the opium trade, the main point in dispute, the prime cause of the various wars hitherto broken out! There was mention made of a revision of the tariff only. Obviously the British plenipotentiaries thought they would more readily attain their object if they endeavoured to get this difficult question solved in some less conspicuous manner. The opium merchants, as well as their antagonists the London philanthropists, seemed equally dissatisfied that the opium matter was still left a "pending question." On the whole, however, this was one of the most marked diplomatic peculiarities of the Treaty

of Tien-Tsin. Instead of rousing anew the passions of the Chinese, and, by wringing such an open and public concession from that Government, weakening still more the hold of the Emperor over his own people, and, whatever their professions of amity, rendering the authorities yet more hostile and rancorous against the foreigners, the wily English ambassador preferred quietly to include opium amongst the other articles of import under the revised tariff, and thus convert it into a common article of import. Accordingly, opium, like cotton, hides, and stockfish, may now be imported at a fixed duty of 30 *taels* (£8 15*s.*) per *picul* of 100 *catties* (133½ lbs.).

The events of which China was the scene shortly after the signature of the treaty, the hostilities of the troops in the Taku forts, the desperate resistance which was made to the advance of the British ambassador, when the latter, agreeably to the stipulations in the new treaty, was preparing to travel to Pekin, all combine to prove that, in their professions of peace and friendliness, the Chinese were not in earnest.

Since that period an army of 20,000 Europeans has dictated a peace to 400,000,000 Asiatics, and their till then deemed impregnable capital; and on 24th October, 1860, Lord Elgin countersigned a new treaty, which, together with the clauses contained in the previous Treaty of Tien-Tsin drawn up two years before, provides for the permanent residence of a British ambassador in the capital of the Chinese Empire, as also for a war indemnity of 8,000,000 *taels* (£2,333,333); throws open the harbour of Tien-Tsin to

foreign commerce, permits Chinese subjects to emigrate, without any restrictions, to any part of the British colonies, and to take service there; assigns to Great Britain a portion of the district of Kow-loang or Cow-loon on the mainland opposite Hong-kong; and, finally, ordains that the original treaty, and all the various additional articles, shall be published by placard in every part of the Empire. Never before had the Middle Kingdom sustained such a humiliation. True, during the rule of the former dynasty, Tao-Kwang (Light of Reason), an end was put to a system that had endured for a thousand years, but conditions such as those that had been imposed by the western nations in the treaties of Tien-Tsin and Pekin, were altogether unheard of in the history of China, and afford convincing proof of its weakness and approaching downfal, the more so, as the late Emperor Hien-fung was a jealous upholder of the old Asiatic doctrines and state-craft. Only the utmost necessity and unceasing pressure could have induced him to lower his arms before the barbarians of the west, and to endure that an enemy should have dictated conditions of peace in his own capital, hitherto inaccessible to foreign nations. English, French, and American ships of war hold possession of the most important forts of China. In several provinces of the interior, a rebel emperor has set up his camp, while on the banks of the Amoor, on the north of the Empire, Russia is building fortresses, and acting as if she were quite at home in that region. But all these phenomena, however divergent the interests, may at

present point to one stupendous result,—rousing the immense Chinese Empire from its thousand years' lethargy, and forcing the natives who populate it to follow in the great onward career of civilization, which in our days is rushing with the rapidity of a tempest through the world!

While the Commodore and some of his staff were proceeding to Canton in the gun-boat, the naturalists made an excursion to the Portuguese settlement of Macao, about 35 miles distant from Hong-kong, with which there is bi-weekly communication by an English steamer. Usually this voyage occupies from four to five hours, but the *Sir Charles Forbes* was a small slow-going tub, and as our departure was delayed several hours in consequence of a large shipment of chests of opium, for which it was hoped a better price would be obtained at Macao, and as we had on our way thither to contend with rain, squalls, and contrary winds, it was dark ere we reached Macao.

We were not a little taken aback at finding several of the passengers armed with revolvers. However, these seemingly superfluous precautions against danger in a pleasure sail of a few hours were well founded. Not long before, it had happened that the European passengers to Macao had been assailed by the Chinese on board, and all murdered in cold blood! the Chinese had stealthily watched for the moment when the captain and passengers were at table in the confined cabin of the little craft, took possession of the vessel, and murdered every European on board. The captain and

some of the passengers sprang overboard to save their lives, but only one man, an Englishman, succeeded in effecting his escape, and giving intelligence of this terrible affair. After they had possessed themselves of a considerable booty, the pirates set the vessel on fire, and set at nought all efforts to bring them to punishment by escaping into the interior of the country.

The arrangements for paying passage money, expenses, &c., are apt to strike a stranger as singular. Gold is absolutely out of use, and the current coins, such as Mexican dollars, and copper money, or cash, are too bulky to admit of their being lugged about to pay large amounts. In order to provide for the expenses of a pleasure party of a couple of days it would be necessary to take a large bag, which there was the further danger might disappear somewhere without hands. An excellent arrangement has accordingly been introduced, by which each passenger pays his fare and other expenses, by means of a check on any one of the mercantile houses in Macao or Hong-kong, which is filled up with the entire amount for collection by the controller, and is cashed on his return. This custom is also a remarkable example of mutual confidence in public life, even if it be explained by the fact that the majority of the passengers are well known, and that China has as yet only been frequented by well-off foreigners.

The passage from Hong-kong to Macao is not entirely devoid of interest. The course of the steamer lies at first

among narrow canals, between lofty granite rocks: so soon as she emerges from these, the muddy disturbed colour of the water indicates that she is now crossing the mouth of the Canton River proper. Stately ships are seen passing up or down, while junks and fishing boats are plying on every side. The majestic conical peak, 3000 feet high, of the island of Lantao, and the Castle Peak scarred with a deep furrow from top to bottom, on the mainland of the province of Quang-tong directly opposite, form the back-ground. The regularity of the conical shape in these peaks, which seems to point to their being of volcanic origin, renders it probable that they are either granite or porphyritic in structure. The mouth of the Canton River is so wide, that the opposing shores only gradually become visible, the wide expanse of water, extending on every side till lost in the horizon, giving the traveller the impression that he is on the open sea.

Already, before the houses of Macao could be very easily made out, we passed the merchant ships lying in the roads, which cannot approach within from six to eight nautical miles. The small thoroughly land-locked "inner harbour," as it is called, lying on the other side of the narrow tongue of land on which Macao is situate, is only accessible for small vessels and Chinese junks, which visit it in large numbers.

The first view of the city of Macao is not less charming than that of Victoria. The long ranges of houses are picturesquely grouped around the numerous little hills surmounted by forts, which form the greater part of the isthmus;

while the beautiful Praya Grande, where palaces and imposing mansions are disposed in long array close along the shore, in order to get the benefit of the refreshing sea-breezes, makes a deep and lasting impression upon the stranger. Churches with lofty double towers shooting into the air, and the vast dome of the Jesuit College, at once single the city out as Catholic, and impart to its external aspect a strong contrast with the adjoining English colony.

Macao is a favourite resort of the foreigners settled in Hong-kong for change of air, which in these latitudes seems to be even more necessary than in Europe. So long as Canton was the chief seat of the European traders, the Portuguese settlement was used by them as a summer residence for their families, whither they could themselves occasionally retire from the bustle of Canton, and the attendant insecurity of life, to spend a few days of calm enjoyment with their families. On account of the alarms of war of the previous year, most of the Canton merchants had come down to Hong-kong and Macao to settle, in consequence of which the latter town has an unusually lively appearance, while its trade, which had previously been in a rather languishing condition, has materially improved.

When the steamer makes its appearance in the roads of Macao, it is immediately surrounded by an innumerable swarm of what are called Tanka-boats, mostly propelled by women, who with yells and shrieks bid for the privilege of conveying the passengers to shore. As there is no suit-

able landing-place on the eastern side of the roads, the traveller is conveyed to the shore through the lash of the waves in a small cockle-shaped boat, just as at Madeira or Madras, and equally uncomfortably; but although the boat and the mode in which it is navigated are anything but calculated to inspire confidence, such a thing as an accident is of rare occurrence.

The naturalists of the *Novara* found an exceedingly friendly and hearty reception at the beautiful residence of the Russian Consul, M. Von Carlowitz, who shortly before had come from Canton to settle in Macao, with his excellent wife, a very beautiful lady of Altenburg in Germany, there to await the upshot of the war.

Our first visit the following morning—a bright and beautiful Sabbath morning—was to the renowned Camoens Grotto, situated in a large well-wooded park, partly covered with primeval forest, the property of a Portuguese family of the name of Marquez. All around there reigned utter, almost sacred silence. Here it was that Camoens, banished from his native land, wrote his Lusiad. The park with its fragrant shady aisles, its majestic leafy domes, impervious even to the rays of the tropical sun, its huge piles of rock round which clamber the immense roots of gigantic fig-trees, its deliciously cool atmosphere, its soft green velvet paths, its heaps of ruined walls, and its death-like quietness, seems as though destined for the asylum of an exiled poet, who, instead of lamenting his destiny like common men in sullen silence, felt

his spirit roused amid this wonderful tropical beauty to fresh sublime efforts,—"Things unattempted yet in prose or rhyme!" In an ill-contrived niche in the substructure of the grotto is a bust, in terra-cotta, of the great poet, with the inscription, "Louis de Camoens, born 1524, died 1579." On the broad marble pedestal whereon stands this bust, which savours but little of artistic taste, various verses from the Lusiad have been engraved with an iron stylus.* Formerly this grotto must have had a much more agreeable appearance, but the present proprietor thought to beautify it by making an addition to it, which has resulted in its having almost entirely lost its original character. From one point within the grotto, called the observatory, and traditionally used as such by Camoens, there is a beautiful peep over the inner harbour, with its throng of busy human ants. Quite close to this singular abode for a poet, is the meeting-house of an evangelical Christian community, numbering about 200 souls, with a cemetery attached, which, with its handsome stone monuments and beautifully laid-out gardens, constitutes one of the most interesting places of outdoor resort in the colony.

The most extensive and important edifice in the settlement of Macao, founded in 1563 by the Portuguese, on a peninsula of the same name, about five square miles in extent, is the Pagoda of Makok and its different temples, situate on the

* In front, Canto X. v. 25; XII. vv. 79—80. On the back, Canto VI. vv. 95, 131, and Canto VIII. v. 42.

slope of a hill between picturesque groups of granite rocks, studded with gigantic Chinese inscriptions and splendid clumps of trees. At the entrance of this retreat for the gods, is a large fantastically-adorned Buddhist temple, surrounded by a large number of apartments, in which reside the priests, and where they carry on their household duties, and prepare tapers and sycee-paper for the worship of their deities, and where are also a few private altars to divinities, whose influence and protection the Chinese ladies of doubtful reputation do not, it seems, venture publicly to invoke.

Steps cut in the granite rock conduct to the highest point, about 200 feet above sea-level, on which there is likewise a temple. At the time of our visit, a number of Buddhist priests in long yellow plaited garments were ascending to the summit, preceded by flute-players, there to perform their devotions. On their return they distributed among the poor Chinese congregated in the chief apartment of the temple, a large quantity of fruit and other eatables.

While at Macao we visited one of the most respected of the foreigners settled there, Dr. Kane, an English physician, who has for years resided in the colony. This gentleman was so kind as to present us with the head of a statue from the renowned nine-storied or Flower Pagoda (Hwa-tah) near Canton, which during a visit he paid to that half-ruined edifice in March, 1857, he had found lying on the ground, a fragment from a sandstone figure on the seventh story, representing a pupil of Buddha. This Pagoda, 160 feet high,

was constructed upwards of a thousand years since, which must accordingly be the age of the relic in question.

The number of inhabitants at present in Macao amounts to about 97,000, of whom 90,000 are Chinese and 7000 Portuguese and Mestizoes. Of other foreign nations there are but a very few in the peninsula. The chief article of commerce in the colony is opium, which finds its way hence into the interior in large quantities. Hong-kong is in too close proximity, is too favourably situated, and is inhabited by too energetic a race, to admit of Macao, especially so long as it remains in the hands of the Portuguese, recovering its former commercial importance. Portugal derives but little profit from her colonies, and it is only national pride that will not hear of this possession, which is more a burden than a source of aid to the mother country, being disposed of by way of sale to either the English or the North Americans. However, the maintenance of this colony costs the Portuguese home Government but little, as the colonists support the chief expenses themselves. Thus the pay of the Governor, who receives £1260 per annum, as also that of the military force of about 400 men, and of a small ship stationed in the harbour, are all defrayed by the colonists.

Macao is at present the chief point for the shipment of Chinese labourers or coolies to the West Indies. There are above 10,000 Chinese annually whom hunger and want drive to sell themselves virtually as slaves to the traders in

human flesh, to drag out a miserable existence far from home. They are chiefly sent from Macao to the Havanna. We visited the house in which these pitiable objects are confined till the departure of the ship; we saw the haggard, reckless look of these wretched beings, who, despite the dreadful fate that awaits them, hire themselves out to Portuguese and Spanish kidnappers. In return for a free passage to Havanna, they bind themselves to work for eight years after their arrival with whatever master is found for them at four dollars a month,* a rate of wage very much lower than that paid to the labourer of the country, or even to the manumitted slave. This immense difference however does not accrue so much to the West India planter as to the speculators who are engaged in the importation of Chinese, for each of whom a large premium is paid. The voyage, which usually lasts from four to five months and costs about £70 a-head, is chiefly carried on in French, Portuguese, and—alas! that it should be so—English and German ships. What sufferings the unhappy emigrants are exposed to during the voyage, appears from the fact that a number of them not unfrequently jump overboard, to seek a refuge from their misery under the waves. Cases have been known in which, owing to hard fare and mismanagement, 38 per cent. of the emigrants have died on the passage!†

* Even these four dollars sustain a reduction during the first year, since the emigrant must for the first year pay one dollar a month to defray necessaries, partly provisions, partly clothes, supplied to him to the amount of $12, before his departure.

† J. F. Crawford, Esq., British Consul-General at the Havanna, in an official

The society which takes charge of this trade in exporting men is known as the *Colonisadora*, and has its head-quarters in the Havanna. Each Chinese must before leaving Macao subscribe a contract which is for the exclusive benefit of the society, and by which the poor emigrants explicitly renounce all the advantage they might derive from certain paragraphs in the Spanish Emigration Act, passed in 1854, which bear upon the interpretation of such contracts. As it is usually only the very poorest, most shiftless, and most ignorant class that emigrates, the contract is enforced without the smallest scruple, and if afterwards the emigrant in the foreign country becomes aware of the privations and oppression he has to submit to in comparison with other workers, the obligations he has entered into are made use of to invoke the protection of the Spanish authorities.* The fact however that these latter secretly favour the objections of the colonization society, sufficiently proves that the interests of a social class and the extension of the labour market in the island are considered by them as of far higher importance than the good of mankind.

document respecting the number of Chinese imported in the course of one year into Havanna proves that in the case of the Peruvian ship *Cora*, 117 out of 292 coolies perished owing to bad water. In one single year (1857) 63 ships, of 43,933 tons, cleared from Chinese ports for the Havanna, with 23,928 Chinese labourers, of whom 3842, or above 16 per cent., died during the voyage.

* We give in the Appendix the original text of one of these contracts, which the Chinese emigrants have to sign preparatory to their going on ship-board, together with a translation, and shall leave the reader to judge whether those are very far wrong who denounce the system as but another form of slave-trade.

To the English Government is due the credit of having initiated an energetic protest against this trade in human beings, and of having taken such steps as tend to mitigate the evil consequences which cannot but result from such a system of deportation. Its representative at the Havanna, Mr. Crawford, was the first and indeed only individual who ventured to make representations to the Spanish Government as to the little humanity shown for these poor Chinese emigrants, and to draw public attention to the system.* Under a humane and well-managed

* The cruelty and injustice with which the poor Chinese emigrants are treated, have repeatedly had the most appalling consequences. The "*China Overland Trade Report*," published at Hong-kong, under date 28th February, 1861, gives the particulars of one such tragedy, which had shortly before occurred on board of one of these emigrant ships. On 22nd February, the American ship *Leonidas* sailed from Canton for the Havanna with a number of coolies on board. Near what is known as the Macao passage, a tremendous noise was suddenly heard in the between-decks. Two of the mates, on descending to inquire into the cause of the disturbance, were attacked with knives and severely wounded. Meanwhile some of the coolies had overpowered the captain and his wife, and had inflicted on them several dangerous wounds. However, the crew ultimately succeeded in driving all the coolies into the hold, though not till after the 29th had been passed in constant fighting. In their desperation they sought to set fire to the ship, by preparing a regular pyre of combustibles, to which they set fire. Ere long, however, the smoke became so intolerable in the hold, that they themselves speedily made every effort to extinguish the fire. The ship returned to Canton. Out of 250 coolies, 94 were dead, of whom some were shot, some were drowned, some suffocated. Singular to say the French man-of-war *Durance* refused to render any assistance. Other accounts speak in the highest terms of the efforts of a German missionary to put a stop to this practice of kidnapping, dignified by the name of emigration, it having not unfrequently happened that young Chinese were openly carried off to Macao, and there as openly sold. This is the more readily credible, inasmuch as the Chinese are most desperate gamblers, and after they have lost all they possess, think nothing of staking their personal liberty. Thus, a short time since, the son of respectable parents in Sunon was sold by the Emigration Society at Macao for 40 dols., and it was only by the most unremitting efforts of the German missionary

administration of the emigration system in China, it might prove of immense service to those countries which are eager to absorb labour, as, owing to the super-abundance of labour in China, a far larger supply as well as a much higher class of labourers might be procured.

M. de Carlowitz was so kind as to accompany us in our various rambles to the more interesting sights and points of view, and more especially when we were busied "doing" the "lines" of the city. On an eminence in the suburbs, about 200 feet high, is what is known as Monte fort, garrisoned by 150 men, whence there is a charming panorama, and the eye catches sight of the Chinese village of Whang-hia, at the period of our visit most hostilely disposed, and where on July 3rd, 1844, the first treaty of peace, friendship, and commerce, was drawn up and signed between China and the United States. Another hill, about 300 feet high, at the outer extremity of the peninsula, on which many years ago the Portuguese had erected a fort, of which only the foundations can now be traced, commands the tongue of land on which stands the city, as well as all the eastern portion of the island, and amply repays the trouble of ascent. On the road thither, by which the communication with the mainland of China is mainly carried on, we came upon the corpse of a coolie, which had apparently lain for several days in the very middle of the

already mentioned that the wretched lad was re-purchased for £60, and thus escaped a terrible destiny. Two other Chinese were shipped at the same time, the bargain in their case being recognized.

road. A part of the head and the right hand had been already stripped of the flesh by the carrion-crows, and enormous swarms of insects had fastened on the upper portions of the naked horribly swollen dead body. The miserable being had obviously fallen a victim to want and destitution. His strength seemed to have failed him while he was earning his miserable subsistence, as two empty broken panniers were lying close beside him. Crowds of people were passing daily, men, women, children, even Portuguese taking their customary promenade on foot or on horseback, without any person giving himself the least trouble to remove the shocking spectacle. Even the representations of the foreign consuls seem to have but little influence on the Portuguese authorities in these matters, and it appears that it is by no means an infrequent occurrence to see dead bodies lying about. A hardly less sickening spectacle was presented on the slope of the hill, where were erected a couple of dozen of small, wretched, filthy huts of palm-straw, which served for the reception of a number of sick and lepers, who, shunned and abandoned by all the world, were sinking in their misery into the grave. Leprosy is regarded by the Chinese as a punishment for secret sins, and those visited with it are accordingly deprived of all assistance or attention. Very probably this coolie, whose body we thus saw lying on the road, was one of those unfortunates who were here digging, as it were, their own graves.

The isthmus which unites the Portuguese settlement on the

peninsula with the mainland, is barely a quarter of a mile in length by 500 feet in breadth. Formerly there was a wall built right across the centre of this tongue of land, which marked the limit of the colony. Here Chinese sentinels used to march to and fro to protect the Flowery Kingdom. This, however, did not prevent the "*Macaoistas*," as the inhabitants of Macao are accustomed to call themselves, from making frequent excursions and pic-nic parties to the mainland and the adjacent Chinese villages. On 22nd August, 1848, however, when the then governor of Macao, Dom João Maria Ferreira do Amaral, while riding along the narrow part of the isthmus, was set upon by a couple of armed Chinese, torn from his horse, and beheaded, his skull and hand being carried off by the murderers, the Portuguese pulled down the wall and destroyed the adjoining Chinese fort, so that not a vestige of either now remains. The government of Macao insisted on the murderers being delivered up, as also on the restitution of the head and hand of the victim, but after the lapse of a year the authorities received an official notification that the murderers had been discovered, and on confession of the crime had been executed at Shunteh. The head and hand of the unhappy Amaral were delivered to the Portuguese officials by two Chinese commissioners, and solemnly interred with the other remains. In the course of the correspondence with reference to this matter * between the Chinese and Portuguese authorities, it appeared that, owing to certain stringent regu-

* See "Chinese Repository," vol. x., of October, 1842.

lations he had laid down, Governor Amaral had long been marked out for destruction by the Chinese population of Macao. The chief complaint against him was that he had profaned the graves of their ancestors in the suburbs of Macao, and had constructed new streets right through them. Every attack of illness, every unlucky speculation, every unexpected mischance, which happened to any of the Chinese residents in Macao, was ascribed to the vengeance of those spirits, whose repose had been so wantonly violated for such an insignificant purpose. The Chinese have no regular cemeteries for their dead. They inter them anywhere about the township, simply marking the spot with a stone or an inscription. At the new-year's festival these graves are adorned in the most gaudy manner, none, not even of the poorest, being neglected in this respect. This pious feeling for the dead is in singular and rude contrast with the indifference with which the Chinese regard the misfortunes of their neighbours, and the cruelty with which mothers expose their new-born children, or even leave them to die.

The trade between Macao and the mainland is very active: in the quarter of an hour that we were upon the isthmus there passed at least 60 men loaded with goods or provisions, moving to and fro to the settlement. Among these there were also sedan-chairmen, conveying back to the neighbouring villages such of the better class of Chinese as had been doing business in the city. The effect of warlike rumours from Canton and the Pei-ho had meanwhile become apparent

among the European population of Macao. The insecurity of life and property increased daily. No one could venture to go a mile or two beyond the city. Even a beautiful pic-nic house, erected by the foreigners on "Green Island," close by the town, whither during peaceful times frequent excursions were made by European residents with their families, had been for months empty and gutted.

The Praya Grande, or rather the shady promenade, at its eastern extremity serves as a rendezvous for the gay world, and on Sundays, when a band of music plays here, one can scarcely pass through the crowd.

The Portuguese, who even in their native country are not a handsome race, lose still more in their physical qualities by the unscrupulous manner in which they cross with the native races. This circumstance makes the contrast still more apparent of simple, graceful, pale ladies of the Anglo-Saxon race, who now and then appear between the ugly dark natives. In the evening, towards sunset, these lovely creatures make their appearance in their sedan or other chairs in the Campo San Francisco, there to enjoy the cool evening sea-breezes. A great number of sedan porters halt here with their precious burdens, and elegantly-attired cavaliers saunter about, striving by amiable phrases and flattering remarks to elicit a smile. While these vehicles form the commonest mode of conveyance, we also saw there but few saddle-horses, and only one single carriage, the property of a rich brownish native, baronized for the amount of 40,000

dollars, and who thought by this means to display his taste, his luxury, and his nobility!

We had heard so much of certain wonderful singing stones, on a large island opposite the inner part of the harbour, that several of our party made an excursion thither. Neither natives nor indeed Europeans could give us any explanation of this singular phenomenon, but all hold that the stones must contain metal in some certain proportion, while electricity and magnetism would do the rest. The naturalists were accompanied to this mysterious spot by M. Von Carlowitz, Dr. Kane, and a Chinese physician, Dr. Wong-fun. The estimable and highly-educated Wong-fun had graduated as Doctor of Medicine in the University of Edinburgh, and had afterwards enlarged his experience by practising some time in the United States, since which he had practised the healing art with great success upon his own countrymen. A European in intelligence and education, he was still a Chinese in external appearance, and wore, as formerly, a long tail. Probably Wong-fun adhered to this ancient custom in order the more readily to indoctrinate his fellow-countrymen with European ideas.

Some small Tanka boats, in which, as already mentioned, only two persons can be accommodated at once, and which are exclusively managed by women, conveyed our party over the bosom of the inner harbour to the opposite shore. We then proceeded through a beautiful valley, covered with rice fields, and traversed in its entire extent by a mountain

torrent, which is dammed off, and drives a number of Chinese mills with the small water-courses. In the background of this valley lies the mysterious spot. The marvel itself presently became visible in a large expanse of syenite rock, greatly resembling that in the Oderwald of Hesse. Some of these have been tilted on the others, and the hard syenite resounds when struck with a hammer, just as a block of marble or basalt vibrates when struck, with a bell-like sound. These musical blocks therefore are but little interesting, unless that the Chinese make use of them to sculpture the figures of lions and tigers to adorn the entrances of their temples.

After a stay of two days in Macao, the naturalists returned to Hong-kong, where they had to devote the little time that would elapse ere the frigate sailed to sorting and packing the collections, and arranging for their transmission: for the manipulation of packing is, as Humboldt well remarked, as important as actual science in such undertakings. That naturalist confers but a small boon on science, whose only care is to collect, but who takes no pains to preserve, the fruits of his labour, by an exact indication of the place where found, and such special particulars as may prevent mistakes, and by carefully guarding against damage to the objects about to be sent, while on their way.

The kind reception and hospitality of our new friends in Hong-kong remained undiminished to the very last moment of our stay. We were fairly overwhelmed with attentions of

all sorts, each apparently striving to make us forget the unfavourable circumstances under which we visited the Empire of China.

The steamer *Hong-kong*, early on the morning of 18th July, towed us out through the narrow Eastern Straits, the Ly-e-num Pass, and the Ta-thong-wun Channel, into the open sea. As we passed along-side the English frigate *Nankin*, carrying the broad pendant of the amiable and excellent Commodore Stewart, our band played "God save the Queen," while the English ensign was dipped, by way of parting salute. A little further on the Chinese Comprador, who had supplied the *Novara* with provisions daily during her stay, had stationed himself in his boat to give us a parting farewell with a roar of gong-gong, while innumerable rockets whizzed and exploded in the air.

We found a tolerably high sea outside, but a fine fresh S.W. breeze, under which we rapidly increased our distance from the shore. In like manner as when we entered, we had now in getting out to thread our way among thousands of fishing-boats sailing about in couples, which cruise about to a distance of even 50 and 60 miles to sea. The steamer which towed us through the narrow Eastern Channel, and had us just four hours and twenty minutes in tow, charged the amount of 300 dollars (£63), so that each minute of towing cost rather over one dollar. After making a tack towards Lemma Island, in order to avoid the dangerous Nine-pin rock, the wind sprung up from E.S.E., so that we were

enabled to lie our proper course, and by sun-down had cleared *Piedra bianca.*

With fine weather and a fresh S. W. monsoon our voyage was so speedy, that by 2nd July we were in the latitude of Formosa, but without being able to distinguish the high land, either on the Chinese coast or on that island, and by 23rd July we were off the Saddle Islands, at the mouth of the Yang-tse-Kiang.

Just as we reached this, the door, as it were, through which we had to enter, the weather chose to change with the utmost suddenness. Calms and contrary winds, coupled with the powerful current of the mighty river, sweeping through the islands, prevented our further advance, and on the 24th we had to cast anchor near the easternmost Saddle Island. Close to us on every side were numbers of other ships equally unfortunate with ourselves, while the spectacle of the steamers, pursuing their course without feeling any obstruction, filled us with envy. We had taken a Chinese pilot on board, and by 25th July were in sight of Gutzlaff, a small islet of rock 210 feet high, the best land-mark of the "Son of Ocean," and just before sunset anchored off the outer bar. We now had fair breezes, and without further obstacles passed over the bar in from 30 to 33 feet water, which in bad weather, however, is exceedingly dangerous. We were still out of sight of land; even the islands we had already passed sank below the horizon, and still there was nothing visible but an unbroken expanse of yellowish red water, which reflected

with the utmost brilliancy the rays of the sun. A light-ship moored to a sand-bank, and a wreck on another sand-bank, are, after leaving Gutzlaff Island, the sole land-marks by which the pilot can hope to keep the channel, which is only from one to two miles wide in this vast shoreless river estuary. Indeed the entrance of the Yang-tse-Kiang is regarded as one of the most difficult feats for a large ship. With favourable wind and weather, the *Novara* cleared without accident the 47 miles between the bar and the place where the Wusung falls into the Yang-tse-Kiang, and on the evening of the 26th July dropped anchor in front of Wusung. The navigation presented little that was interesting, yet each man involuntarily felt a thrill as he reflected that he was sailing in the current of the longest river in China, whose source lies thousands of miles inland at Khukkunor, among the Mangolians.

As we neared Wusung, signs of life began to be visible on the river itself; tall three-masters were passing, bound in or out, and scores of Chinese junks with their peculiar rig and build. Far above the light-ship the shore first became visible, low, flat, scarcely above the level of the river, but green and fertile. A Pagoda of the well-known form of the Porcelain tower of Nankin and a few lofty trees enable the pilot to take the bearings of the channel at this point. Only the land on the left is actual mainland, the shore on the right being the coast of the island of Tsuning, lying at the mouth of the river. At the mouth of the Wusung, this southern

arm of the Yang-tse-Kiang, as formed by the above-named island, is about six and a half nautical miles in width, and a little higher up is further narrowed by Bush Island to a width of four miles.

The first inhabited spot at the junction of the Wusung and Yang-tse-Kiang is the wretched filthy village of Wusung, which owes its importance solely and exclusively to the opium boats, which the merchants of Hong-kong and Shanghai used to station here in the stream, in order more readily to sell and deliver to the Chinese that forbidden article. Thus the natives took on themselves the responsibility of opium smuggling, while the foreign merchants became thereby involved in a conflict with the Chinese Government. The opium sold per month from the ships stationed at Wusung amounts to from 2500 to 2800 chests, in value about 500 *taels* (£150) per chest (£375,000 to £420,000).

The mouth of the Wusung is the entrance to Shanghai, which lies about 12 miles up the Wusung or Shanghai river, but in consequence of a mud-bank is only accessible to large ships at spring-tide. Nankin lies up the Yang-tse-Kiang 180 miles from Shanghai, the channel being so deep that even a frigate may sail close up under its walls. Six hundred miles distant from the embouchure of the Wusung lie the three immense cities of Wu-chang, Hang-iang, and Shan-Keu, containing 8,000,000 inhabitants, the central point of the internal commerce of China; and about 400 miles further up are the first rapids of the Yang-tse-Kiang, which completely

prevent all further navigation. Up to this point the mighty river, like the Mississippi, the Rhine, or the Danube, may be navigated by river steamers, without the slightest danger or difficulty. What an enormous trade, what a tremendous development, will ere long be witnessed here, so soon as, in accordance with the stipulations of the Tien-Tsin and Pekin treaties, English ships, freighted with goods and necessaries of all sorts, shall steam up this most splendid of rivers and its tributaries, and the inhabitants of the far interior shall become acquainted with the products of European industry, and in exchange shall export to Europe innumerable articles of new and valuable trade. For it is the greatest service of the merchant that he not alone opens new channels of commerce, and by increased exportation of the fabrics of his native land tends to build up his power, but that he civilizes foreign nations, and enriches science and industry with innumerable fresh acquisitions.

The larger ships usually lie at anchor at the little Chinese village of Wusung on the river of that name, just where it falls into the Yang-tse-Kiang, and here accordingly, owing to the hostilities, we found upwards of twenty ships of war of various nationalities at anchor. Among others the powerful American steam-ship *Minnesota*, and the French frigates *Audacieuse* and *Nemesis*, an imposing spectacle in these distant regions, and to which the half-ruined Chinese fort on the tongue of land between the Wusung and the Yang-tse-Kiang, with its couple of wretched cannon, presented a tragi-comic contrast.

Numbers of Chinese boats, from the smallest cloth-awning *sampan* propelled by one man with a paddle to the large junk with fifteen masts, and sentences painted along the bends, were cruising in every direction. Ere long a Comprador found his way on board, who according to custom undertook to provide the frigate with everything she required.

Commodore Wüllerstorff purposed proceeding with the frigate to Shanghai; but as it would be necessary to wait for a fair wind, or else to engage another steam-tug, implying a delay of several days, the naturalists were permitted to avail themselves of the opportunity offered by the Comprador's boat to proceed at once to Shanghai, which voyage we were two hours and a half in performing.

While the number of European merchantmen that we passed, some lying at anchor in front of Wusung, others sailing up or down stream, was quite surprising, yet the sight of the river at Shanghai far surpassed all expectation. Here, close packed together in a channel rather narrower than elsewhere, was drawn up tier after tier of shipping, a quite impervious forest of masts, athwart which at intervals the large warehouses of the European merchants indistinctly loomed, lining the banks on either side. The newspaper lists at the time of our visit gave the names of no less than 102 large American and European merchantmen in the Shanghai River, in addition to which there were upwards of a thousand native junks lying in the stream with their short crooked masts, the most convincing evidence of the commercial im-

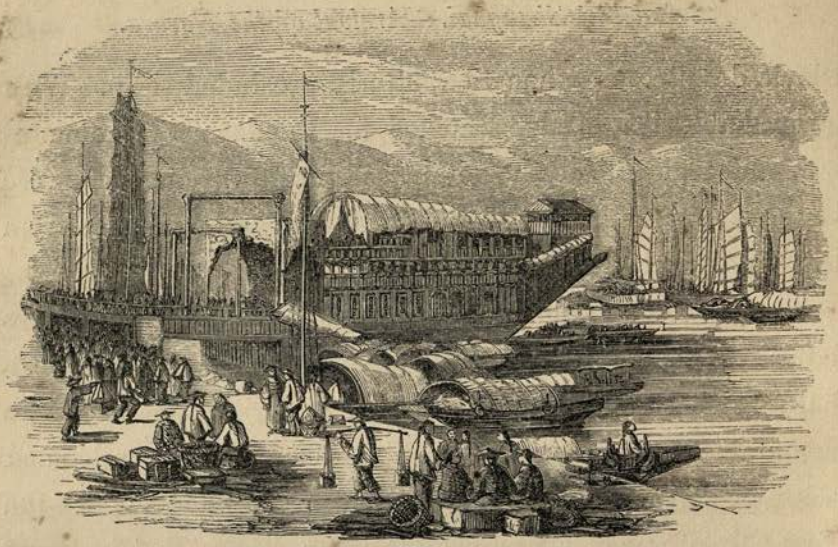
portance which this place has attained within the short space of time that has elapsed since by the Treaty of Nankin in 1842 foreign factories were authorized to be erected here.

On the shore the flags of the Consulates of the more important seafaring nations fluttered gaily in the breeze from lofty flag-staffs on the top of the imposing buildings. Hardly had we landed ere we were surrounded by an ungainly crowd of Chinese coolies, who with their bamboo staves began such a serious battle among themselves for the right of carrying our baggage, that it was only by the interposition of the police that several were not left on the spot severely wounded.

The intelligence that there was in Shanghai not a single house of entertainment, such as we understand by the name of "hotel" in Europe, was the less agreeable, as the dwellings of the resident Europeans, where, under ordinary circumstances, strangers are received with the utmost hospitality, happened at present to be occupied by the officers of the numerous war-ships, as well as by members of the two embassies. The only place where we could be received was what is known as the Union Hotel, a den in the fullest sense of the word, in which we passed one of the most uncomfortable nights we ever remember. Myriads of mosquitoes, the true blood-thirsty "gallinipper," loud-shouting drunken seamen, dogs howling, intolerable heat, which not even a tremendous thunder-storm that broke forth during the night could assuage,—such were some of the amenities of our reception,

which, despite our exhaustion, utterly precluded sleep. With unspeakable longing we watched for the dawn of the morning, and, thanks to the hospitality of our new friends, we were in the course of the day fortunate enough to be released from this hideous abode.

The *Novara* did not remain long behind us. A few days later, on 29th July, she sailed gallantly up in an hour and a half, from Wusung, on the top of a spring-tide, and with favourable breezes, and on reaching Shanghai was welcomed with pride and delight by the German residents here—the first ship-of-war of a first-class German power that had ever been seen in the river Wusung.



XV.

Shanghai.

DURATION OF STAY FROM 25TH JULY TO 11TH AUGUST, 1858.

A stroll through the old Chinese quarter.—Book-stalls.—Public Baths.—Chinese Pawnbrokers.—Foundling hospital.—The Hall of Universal Benevolence.—Sacrificial Hall of Medical Faculty.—City prison.—Temple of the Goddess of the Sea.—Chinese taverns.—Tea garden.—Temple of Buddha.—Temple of Confucius.—Taouist convent.—Chinese nuns.—An apothecary's store, and what is sold therein.—Public schools.—Christian places of worship.—Native industry.—Cenotaphs to the memory of beneficent females.—A Chinese patrician family.—The villas of the foreign merchants.—Activity of the London Missionary Society.—Dr. Hobson.—Chinese medical works.—Leprosy.—The American Missionary Society.—Dr. Bridgman.—Main-tze tribe.—Mission schools for Chinese boys and girls.—The North-China branch of the Royal Asiatic Society.—Meeting in honour of the Members of the *Novara* Expedition.—Mons. de Montigny.—Baron Gros.—Interview with the Táu-Tái, or chief Chinese official of the city.—The Jesuit mission at Sikkawéi.—The Pagoda of Long-Sah.—A Chinese dinner.—Serenade by the German singing-club.—The Germans in China.—Influence of the Treaties of Tien-Tsin and Pekin upon commerce.—Silk.—Tea.—The Chinese sugar-cane.—Various species of Bamboos employed in the manufacture of paper.—The varnish-tree.—The tallow-tree.—The wax-tree.—Mosquito tobacco.—Articles of import.—Opium.—The Tai-ping rebels.—Departure from Shanghai.—A typhoon in the China sea.—Sight the island of Puynipet in the Caroline Archipelago.

SHANGHAI, or Shanghai-Hein (the city near the sea), is divided into the Chinese city proper, enclosed within walls

twenty-four feet in height, and the foreign-quarter, which has been laid out beyond the walls since the year 1843, and is as much distinguished by elegance as by comfort. Old Shanghai, only accessible by three of the six gates with which it is furnished, contains 250,000 inhabitants in a superficial area of nine Li, or about two and one-third English miles, and, including the population of neighbouring towns, who are constantly flocking to and fro, about 400,000. The streets are filthy and singularly narrow, so much so that occasionally it is difficult for two men to pass each other, the small cross streets vividly recalling Venice, or the "lanes" of London. It is with difficulty, and only by a constant succession of cries and hearty buffets, that the bearers of merchandise can force their way through these intricate passages, and find their way to their destination. The houses, for the most part one and two storeys in height, usually consist of shops on the ground-floor, each with a flaming superscription in gigantic characters, which, the better to arrest the curiosity of the passers-by, is generally hung diagonally across the narrow street. The living throng, which throughout the entire day surges to and fro here, is so immense and so various that it leaves upon a stranger an impression even deeper than that made by the crowds and bustle of Piccadilly or Regent Street, on a fine day in the height of "the season." The grotesqueness and filth of almost everything that meets the eye rather adds to the singularity of the spectacle, and while the visitor on the one

hand speedily finds ample justification for extricating himself from the din and confusion, he nevertheless encounters at every step some new object of attraction and absorbing interest.

Entering the city through the east gate, on whose walls, by way of example to the multitude, are suspended in sacks and wickerwork numerous skulls of rebels and murderers, on whom justice has been done, we find ourselves in China street, one of the principal streets of Shanghai, and in which are most of the best class of native shops. It is however no wider or cleaner than the other streets of the city, and might be termed a "lane" with far more propriety than a street. We were conveyed within the lofty, gloomy "enceinte" of the walls in the sedan-chair of the country, after which, under the guidance of Mr. Muirhead, an English missionary, who in the kindest manner had offered to be our *cicerone*, we proceeded to stroll through the town.

Close to the east gate we entered a book-stall, in which were heaped up immense piles of stitched books. A number of Chinese in white nankeen jackets, their foreheads smooth shaved, and each with a "tail" behind dependent to the heels, started forward to inquire the strangers' wants, and minister to them. Our inquiries however were by no means merely dictated by the desire to gratify a silly curiosity. A learned countryman, Dr. Pfizmaier, one of the profoundest of Chinese scholars, had intrusted us with a list of fourteen rare Chinese books, the purchase of which seemed to us specially

desirable, and we accordingly made every exertion, with the assistance of our companion, himself well acquainted with Chinese, to crown our search with success. With one exception we succeeded in purchasing the entire catalogue, and therewith gladly brought to an end our wearisome stay of upwards of an hour in the close steaming book-shop, exposed the while to a more than tropical temperature.

Chinese authors are, it must be allowed, terribly prolix in the treatment of their subjects, and instances are by no means uncommon in China of works, especially those of an historical nature, extending to from forty to fifty volumes! Thus, for example, the "Seventeen Historical classics" consists of 337 parts:—"Mingschintschuen" (History of the most renowned ministers and statesmen), of thirty volumes:—"Singpu" (Lives of remarkable persons), of 122 parts:—the "Encyclopedia of Matuanlin," with its additions, even reaches the immense number of six hundred volumes!!* Books are generally far from expensive in China; for a few dollars, comparatively, one may, owing to the cheapness of labour and of cost of production, purchase quite a large supply of ordinary literature.

Adjoining this book-shop is a public bath establishment, where for 16 copper cash † (rather less than 1*d.* sterling), one

* Compare Gutzlaff's "History of the Chinese Empire," published by K. Neumann; Stuttgart and Tübingen, 1847.

† The copper cash is the sole currency in use, and consists of a mixture of copper, iron, and tin. Its value, reckoned by the string of 100, is variable, and is calculated according to the proportional traffic in foreign merchandise. On the average, from 1250—1300 cash are about equal to $1·00 American, or 4*s.* 2*d.* English.

may get a vapour bath, while six cash more are paid for keeping custody of the habiliments. The bath is far from being elegant or comfortable, but when one reflects on such extraordinary cheapness, it seems as though the very utmost had been attained. It consists of a large apartment, filled with steam, which is from time to time renewed, by dashing hot water upon stones, maintained at a high temperature, while ranged in readiness all round are a number of tubs of cold water for cooling the bather. In one of these establishments about thirty persons may bathe at once, and as John Chinaman, despite his filthy manners, is passably clean about the body, as testified by the pains he is at with his head and hands, these places are as extensively patronized as they are greatly needed.

Our next stoppage was at a pawnbroker's, an institution which, to all appearance, has been far longer in vogue in China than in Europe, and is made great use of by the wealthy as well as the poorer classes. In the Celestial Kingdom, the same custom prevails as with us of pawning the winter habiliments in summer, and summer apparel in winter; and this not so much for the sake of the money borrowed upon them, as to have them kept in safety and carefully preserved, especially in the case of costly furs. In China the usual advance is of one half the value, upon a very low computation of the article pledged, for which the monthly charge is ten cash per 500, or twenty-four per cent. per annum. Whatever has not been redeemed at the end of three years,

or of which the interest has not been paid, is put up to auction and knocked down to the highest bidder, the proceeds going to the benefit of the establishment. The utmost per centage allowed by law is three per cent. a month; but it must not exceed two per cent. in winter, in order that the poor may be enabled to redeem the articles pledged. The broker gives a ticket for the articles pledged, which have a definite value, and may be sold in the street. Thieves find these establishments very handy for disposing of their plunder, as they deface or destroy the pawn-ticket so as to prevent the rightful owner from regaining possession of the stolen articles. When a pawnbroker sustains any loss through theft, or the outbreak of fire on his premises, he must make good to his customers the value of the destroyed articles that had been left with him as pledges. If, however, the fire has broken out in the house of a neighbour, he is only bound to pay one half of the loss he may sustain. The establishment is managed by fifty individuals, whom the concourse of people flocking in to pledge or redeem property keeps in constant activity.

Considering the notorious and openly avowed indifference everywhere manifested throughout China for the poor, the sick, and the unfortunate, the number of charitable institutions to be found in all parts of China is very surprising, all which, as has lately been proved, do not owe their origin to the introduction of Christianity, but had been in a flourishing condition for a long time previously. Thus in several of

the streets of Shanghai, we came upon hospitals for children and foundlings (育嬰堂), of the latter of which the one we visited was founded by voluntary contribution so far back as 1710. This humane institution has a landed property of about 30 acres, by the produce of which, as well as frequent public collections, it is supported. In 1783, this orphan hospital was amalgamated with an asylum for old and decrepit persons, and others incapacitated for labour, and one wealthy Chinese gentleman provided 3000 taels* for this praiseworthy object, but somewhat later this joint plan was abandoned, and the Orphan Asylum remains to this day self-supporting, while the poor, the sick, and the aged are relieved every month at the Custom-house out of funds specially set apart.

At the period of our visit we found thirty infants in the building, who had been deposited by their mothers in a

* In Shanghai the medium of exchange in common use is not as at Hong-kong reckoned in dollars, but in taels, an imaginary currency of the value of about \$1·33, so that 100 taels=\$133⅓, or about £27 15*s.* Most accounts are rendered in taels, whence they are reduced into Mexican dollars, the only foreign silver that is current. When European merchants first came in contact with the children of the Flowery Land, the latter used to pay a sort of premium for American dollars, while for those bearing the effigies of Charles III. (known as the Karolus dollar), quite a special price was paid. Gradually, however, the value sank till, as already mentioned, 75 taels=\$100. What has so often been reported of a special Shanghai dollar coinage is quite erroneous. There are neither gold nor silver coins struck in China, but solely of copper, and in some provinces of iron. The term Shanghai dollar is equivalent to tael, which, as already remarked, is, like the guinea in England, unknown to commerce. 1 tael=5*s.* 7*d.* English, but in trade it is taken as 6*s.* It occasionally rises as high as 6*s.* 6*d.*, when the proportion between the dollar and the tael is as 100 to 72.

basket suspended in a recess at the entrance. After the new-born child has been deposited, a signal is given with a bamboo stick, after which the receptacle is turned inwards and the innocent without delay taken charge of. Each child has its own wet-nurse or attendant.

The building is lofty, roomy, and passably clean, but the children, one and all without exception, have a sickly appearance, and seem to suffer much from eruptions and affections of the eye. There was not one child above two years of age. It is worth recording that every one of these children was of the female sex; their male offspring, even when illegitimate, the mothers seem much less disposed to part from. It frequently happens, moreover, owing to the low considerations in which the female sex are held, that even legitimate children of that sex are occasionally committed to the silent receptacle of the foundling's basket.

We inquired of one of the overseers what was the destiny of these unhappy children when they grew up, but could get no satisfactory reply. We were informed that they were occasionally adopted as children by those who had no family. But more extended inquiries leave us rather inclined to believe that these poor waifs of humanity constitute a not inconsiderable contingent to that unhappy class of beings who, carefully brought up, clothed, and fed by speculative foster-mothers, are at a suitable age sold for concubines to the well-to-do Chinese.

One very remarkable charitable institution, for which there

is no parallel in Europe, is the Tûng-jin-tang (同仁堂) or Hall of United Benevolence, founded by a number of philanthropists in 1804, for the interment of the poor. This establishment, through its legacies, donations, and voluntary contributions, speedily became so wealthy that it has been enabled to take up, in addition to its original business, other objects of a not less humane nature. It pensions poor widows of respectable families with 700 cash (about £1 8*s.*) per month; it presents persons above 60 years of age, if sickly and unable to work, with 600 cash (about £1. 4*s.*) a month, and provides, free of charge, wooden coffins, as also digging implements, for those who are too poor to inter their dead relatives. Another humane occupation of the society is the interment of coffins containing dead bodies, which used to be exposed on the bare ground in various parts of the city. Finally, it was the intention of the founder of this charitable institution, so soon as the money should permit, to erect schools for the poor, to provide warm clothing in winter for the helpless, as also to buy up animals destined for the slaughter-house, and set them at liberty again.

The proceedings connected with the direction of the institution are transacted in public, and the managers for the time being are bound to furnish for each year a detailed report* of the management. This humane institution has

An English translation of one of these reports will be found in the 1845 number of Morrison's admirably edited, but now rather rarely met with, monthly periodical, "The Chinese Repository."

since its foundation undergone many reforms, and at the period of our visit was confining its sphere of usefulness to three main objects: 1st, The pensioning aged and broken-down persons of both sexes, with 600 cash a month. These however were not supplied with the money, but were for the most part taken into the house itself, or at least supported through it. 2nd, The dispensing free of charge of various so-called universal medicines, for headache, stomach-complaints, fever, diarrhœa, spasms during the unhealthy season (June to October). On the 3rd, 8th, 13th, 18th, 23rd, and 28th of each month (that is, on every date ending with a 3 or an 8), during the continuance of the sultry, damp, unhealthy season there was also provided for the sick and poor, gratis, advice from Chinese physicians in the great hall. 3rd, The furnishing coffins for the interment of those who died without means, or on payment in part by families not altogether penniless. In one of these extensive magazines we saw a coffin bearing the number 1084, which was just coming into requisition. During 36 months 1000 coffins and upwards had been supplied to poor families for the interment of their dead! As we were leaving the building, we remarked in the principal apartment a large quantity of paper, partly written upon, partly in shreds, all heaped up. On inquiry as to the object of this collection, we were informed that it was for no industrial purpose, but solely to be ascribed to the profound respect the Chinese have for every sort of writing. They regard written leaves as positively holy, and are particularly

careful that no written paper shall chance to fall into improper hands, that might make a wrong use of it. For this reason the society pays for every pound of old waste paper which the poor of Shanghai pick up in the street and bring to the Institution three copper cash, and when the pile has attained a sufficient height it is set on fire at a particular season.

Built in close proximity to this "Hall of United Benevolence" is the sanctuary of the medical profession, or, as Mr. Muirhead translated for our benefit the gigantic Chinese inscription over the portal, "the sacrificial hall of the medical faculty." This is a temple erected at the expense of the nation to a celebrated Chinese physician, whose stature, in an easy, erect attitude, cut in wood the size of life and richly gilt, is erected upon a platform somewhat resembling an altar. Part of the drapery consists of gigantic leaves, while his folded hands clasp a lotos-flower. In front of the image is placed the inscription: "The shrine of the spirit of the King of Medicine." Above the idol are the following words in Chinese, cut in the stone and gilt, "The divine husbandman and sacred ruler!" and thereafter, "For all ages the instructive teacher."

This renowned physician had, it seems, instituted many experiments on himself with new healing remedies, and according to popular belief had attained to an exact knowledge of all that was going on in the human frame, so that he could point out the seat of the malady by simply placing a

piece of common window-glass upon the pit of the patient's stomach, and looking into it!

Adjoining this College of Health is the city prison, or Tschi-hin, in which, when we saw it, were confined about 100 prisoners in the various wards. In that set apart for the worst class of criminals, we saw about 40, heavily shackled and manacled. Three of these were confined in low wooden cages, about three feet in height and width, and four feet in length, and fastened to each other by iron chains running through. These men also wore iron rings on their feet. One of these unfortunates was sentenced to 70, and each of the other two to 60, days of such durance, without being suffered for one moment to come out from the cage, which was placed on the ground, and like a hen-roost, was provided with perches running through it, so as to interfere still further with freedom of movement. Their food consisted of rice and vegetables. According to their own showing, these three were sentenced to this terrible punishment in consequence of some affray, but we had reason to believe that some more serious matter was the real cause of their having this penalty inflicted on them. We gave the unhappy wretches a few pieces of silver. Each hastily secured the donation in a corner of his cage, and seemed in his forlorn condition doubly sensible of the value of a metal whose influence, especially in China, is so powerful, so all-pervading, and so infallible.

One very peculiar institution is the Wei-kwan, a sort of Council Chamber, situated on the N.E. side of the city be-

tween the walls and the river, in which all matters in dispute between mercantile men are adjusted, and in conjunction with which is a temple in honour of the goddess of the seas (Tien-Mú). In the centre of the council-room is a large elegantly-shaped iron pan (Schang-Lú), in which the merchants and seamen frequenting the hall burn slips of paper, on which are written the wishes of those making their offerings. Also money, fruit, &c., are here sacrificed, and Chinese mariners, whose "junks" have come unscathed through a storm, or have been preserved, make their thank-offerings in the shape of elegant little models of their ships, which are placed in various parts of the building. This hall was founded in 1270 by the Sung dynasty, on a site where certain Chinese believed they had observed that the tumultuous tide of the Whampoa river gradually lost its violence, as it approached the spot, a phenomenon which to them seemed of marvellous significance. Under the Yuen and Múi dynasties the temple was repeatedly plundered and burnt to the ground, but was rebuilt through the influence of a Tao-priest. In 1735, an imperial edict ordered the observance of certain religious ceremonies from time to time, an example which has been followed to the present day.

Directly facing the goddess of the sea (called also Kwan-Yin, Queen of Heaven),* who is represented by a life-size

* We occasionally saw the Queen of Heaven (Kwan-Yin) represented with a child in her arms, and have in our possession a piece of carved work representing such a group, which we purchased in a shop at Shanghai. This elegant figure seems to be

figure placed at the bottom of the apartment, a large stage is erected, on which Chinese dramas are represented for their entertainment from 10 o'clock in the morning till nightfall.

In one part of the immense pile of buildings there are also provided dwellings for such Chinese merchants as visit Shanghai from the interior of the kingdom, and have neither friends nor relatives in the city with whom they can take up their residence, for public taverns are in China only frequented by the very lowest classes. We entered one of these Chinese hotels, which we had come upon during our ramble, and inspected the eating-rooms and bed-rooms, which are usually situated on the first floor. The usual charge is from 100 to 140 cash a day for board (4*d.* to 6*d.*), and from 20 to 40 cash for lodging (1*d.* to 2*d.*). The gloomy, filthy, cavernous aspect of each room makes even a moment's stay intolerable. The victuals supplied consist chiefly of rice, vegetables, and fish. In the interior, board and lodging in these taverns is very much cheaper, and the well-known and highly meritorious English missionary Dr. Medhurst, who, in 1845, traversed, in the dress of a Chinese, a large portion of the silk and tea

a favourite deity with the Chinese, as it frequently adorns their little domestic altars, and is especially reverenced by the women who are desirous of the honours of maternity. The striking similarity between this exhibition and that of the Holy Virgin, as we see her represented in Catholic Churches, with the infant Jesus in her arms, must involuntarily suggest the idea that there has been an infusion of Catholicism intermingled here with the rites of Buddha. If the resemblance between the two is not accidental, it may readily be assumed that the same thing has occurred here as in the case of certain Christian legends, which the traveller encounters among various races, on whom the beams of Christian civilization have never been shed.

districts, relates that the customary charge for supper, bed, and breakfast next morning altogether amounted to 80 cash only, or about $3\frac{3}{8}d.$!* In the streets of Shanghai, the eating-houses are greatly out-numbered by the tea-houses, where one gets a cup of tea for 6 cash ($\frac{1}{4}d.$). These, like our own cafés, are laid out with little tables, stools, and benches. As soon as a guest enters and takes his seat, a Chinese attendant brings a cup, throws into it the proper quantity of tea-leaves, and pours boiling water upon it. After the lapse of a few minutes the hot light yellow liquid is hastily swallowed, but avoiding the leaves which are swimming on the surface, and usually serve for a second or even a third infusion. These tea-houses are crowded with visitors throughout the day, who sometimes transact business here over a cup of tea and a pipe of oiled tobacco, sometimes resort hither to wile the time listlessly away.

The chief place of amusement, however, of the native population of Shanghai is the Tea-Garden (Tschin-Huang-Mian), or temple of the Emperor, which contains numerous gardens laid out in Chinese fashion, and booths of all sorts, besides the attractions of jugglers, singers, actors, soothsayers, musicians, and mountebanks, all driving their respective avocations. The whole scene is eminently characteristic of the grotesqueness

* The price of each meal is as follows:—

1 bowl of rice, ...	12 cash	($\frac{1}{2}d.$)
1 „ vegetables, ...	„ „	($\frac{1}{2}d.$)
1 cup of tea, ...	6 „	($\frac{1}{4}d.$)
Breakfast, consisting usually of rice, vegetables, and tea, ...	30 „	($1\frac{1}{4}d.$)
Bed, fire, and attendance, ...	20 „	($\frac{7}{8}d.$)

of Chinese taste. Artificial canals and tanks filled with green stagnant water, redolent of miasmatic effluvia, amid which the Lotos opens its lovely white blossoms, quantities of zig-zag bridges with beautifully carved balustrades, islands with artificially constructed rocks and grottoes, subterranean passages, flags of all shapes and sizes, bearing the most bombastic inscriptions—such are the chief attractions of a Chinese People's Garden, every large town boasting one such, erected at the expense of the State, in which from early morning till late in the evening a vast crowd of human beings is incessantly surging to and fro, intent on pleasure, dissipation, or profit. The rabble, however, have not access to every part of the Tea-Garden, a certain portion being set apart for the recreation of the chief officials of the city (Táu-Tái). This portion, shut off by a lofty wall, is elegantly laid out, and is made attractive with all manner of dwarf trees nursed with great care and expense, besides the usual grottoes, artificial hills and precipices, pavilions, &c. Hither the head magistrate occasionally resorts to pass the warmest hours of the day, and dozes away undisturbed by the cares of his onerous responsibilities. All the public gardens of China present almost the identical features of the one we visited; a park without artificial islands and wooden bridges, without canals (in lieu of paths), without pools of stagnant water thickly covered with the broad leaves of the *Nelumbium*, would, in the eyes of a Chinese, be deprived of its chief pleasure and its greatest attraction.

Close to the Tea-Garden is the largest Buddhist Temple within the city walls, in which throughout the day the over-credulous Chinese kneel before their idols, and with many reverences murmur their set formulas of prayers. Like everything else in China, even religious observances are regarded from the most practical point of view. They think they have done enough when they have gone through a certain round of outward ceremonies. The condition of most of the temples, the utter neglect of some, and the various employments of others, indicate that the Chinese either has no sense of the sanctity attaching to such places of devotion, or else attaches but little value to the act itself. The men rarely enter the temples. It is only the women who, to satisfy the cravings of the heart, have recourse to invoking the Deity. Frequently one sees a worshipper approach the attendant sitting in the porch of the temple, in order to get their horoscope calculated by him for a few cash. For this purpose she shakes with eager devotion a box of bamboo cane filled with thin wands, until one of these wands springs out. The words inscribed on each wand furnish the oracle-expounder with an infallible sign, by which, after consulting one of the books of Chinese wisdom spread out before him, he is enabled to pronounce the answer of the divinity to the prayers preferred by the poor dupe. The most prolific source of revenue of the temple and its ministrants, consists, however, in the sale of the gold and silver tissue paper,*

* This sacrificial paper, coloured and written upon, is usually called "Joss" or

which plays so important a part in the worship of the Chinese, and owing to their zealous and frequent use are heaped up in immense piles, for consumption by fire in a gigantic furnace.

Much more edifying than the interior of the great Buddhist temple with its troops of swag-bellied idols in their parti-coloured apparel, some with a good-humoured leer, others sulkily scowling on the beholder, is the appearance of the temple of Confucius* in a remote quarter of the city. In this extensive building, at once elegant and simple, and with numerous halls and corridors, the scholars undergo their examination for the service of the state; here the Government officials at stated seasons perform certain religious ceremonies, and here all the *literati* assemble for the discussion of grave questions of debate. The main hall has its red-tinted walls covered with Chinese and Tartar inscriptions, all of which refer to Confucius, his doctrines and his wisdom. At intervals, a number of tablets let into the wall inform the visitor that this edifice is devoted to the instruction of the virtuous, and the cultivation of the endowments. At the same time every person who passes this in a sedan chair or on horse-

"Sycee" paper in Canton English, because the prayers addressed to the Divinity are usually for riches and silver ingots (*Sycee*), which the suppliants hope to obtain by entreaty.

* Properly spelt *Kong-fu-tséu*, from which the Europeans have constructed the Latinized name Confucius. *Kong-fu-tséu* (sometimes also written *Kong-tse*) was born 550 B. C. in the city of Kio-siu-bien, in the modern province of Shan-tung.

back, whether an official or one of the people, is compelled to quit his vehicle and traverse the consecrated space on foot. Over the entrance to the right is written: "His virtue is comparable to Heaven and Earth;" and above the door to the left we read, "His teachings comprise all the wisdom of ancient and modern days." Behind the temple is a smaller edifice, dedicated to the five progenitors of Confucius. The temple itself is similarly surrounded with various apartments, all, as their bombastic inscriptions announce, devoted to the honour and advancement of knowledge. One of these chambers is dedicated to the god of Literature, another to the guardian spirit of Science. The latter is curiously represented as a figure holding in one hand a *stylus*, in the other a lump of silver, emblematic, we presume, of "man through wisdom attaining unto riches."

In every city throughout China there is, as well as a tea-garden, a temple in honour of the great teacher Kong-fu-tse, whose knowledge and whose moral system, 2400 years after his mortal pilgrimage, instruct and gladden not merely his own countrymen, but all admirers throughout the world of what is noble and virtuous.

Among the various monasteries of the city, we visited one of the Taouists, called the Du-Kung or Great Mirror (probably of Virtue), where strangers provided with introductions are received and entertained at 150 cash (6*d.* per diem). This cloister, whose sole inhabitants are some five or six Chinese

monks, is situated close to the wall, and forms one of the best points whence to obtain a view of the entire city.

The Taouists, who follow the Tao, the "way of knowledge," and arrogate to themselves a more profound insight into the mysterious powers of nature, as well as more special acquaintance with and definite powers over good and evil spirits, are disciples of the doctrines of Lao-tse,* and are extensively scattered throughout the country, although at present, in consequence of their losing themselves deeper and deeper in a slothful, sensual mode of existence, their proselytism is proceeding at a much slower ratio than formerly. It is purely accidental that there is immediately adjoining the Taoui monastery a convent known as that of the "White nuns," a small one-storey building, kept however singularly neat and clean. Here we saw six Buddhist nuns, with close-shaven heads and in long white dresses, which gave them quite a masculine aspect. They received us with much cour-

* Lao-tse (Lao-tseu), born B. C. 504, in the village of Knio-schin, in the kingdom of Thsu, held the post of keeper of the archives of the palace under the Tscheu dynasty. In his Book of Philosophy (Tao-te-king) the following remarkable words occur: "The rule of antiquity has been, not to shed light on the people, but to keep them in ignorance. A people that comprehends is difficult to govern. On this subject men say, Whoso governs a kingdom in knowledge, the same is the destroyer of that kingdom; whoso governs a kingdom assigning no reason, the same maintains that kingdom. In the family, in the school, children are brought up among idols. When they enter school in the morning they are taught to do honour to the image of Kong-tse. This custom must be forthwith dispensed with." (Compare J. R. Kaeuffer's History of Eastern Asia, for "Friends of the History of Mankind," Leipzig, Brockhaus, 1859, vol. ii. p. 64, and K. F. Neumann's Eastern Asiatic History, Leipzig, W. Engilmann, 1861, p. 129.

tesy, and escorted us round the various apartments with considerable *empressement.* They were mostly widows, who pass their lives here in calm retrospective contemplation, and occupy themselves with preparing little articles for the Buddhist ritual, such as censers, tapers, printed sacrificial papers, &c., with which apparently they contrive to support themselves. These associations (Ni-koo) were usually founded by legacies and donations by pious Chinese, and are exceedingly useful as providing an asylum for poor, helpless women, weary of life. Many widows withdraw into these abodes of peace, there to pass the rest of their lives, free from the tumult of the world, in the exercise of devotion and of works of neighbourly love and charity. Nevertheless, if we are to believe common report, works of piety are not the only objects occasionally pursued in these Buddhist convents, and the web of intrigue and amorous adventure, of which they have frequently been the scene, has not a little tended to lower the estimate in which these religious societies are held, and even threatens to cut short their existence. A people of such a materialistic mode of life, and such ant-like industry, as the Chinese, who rarely know what it is to have one holiday in the entire year, must involuntarily look with argus-like eye on all religious communities, which pass their time in luxurious ease and exemption from care, without in any way advancing the well-being of their fellow-creatures by either mental or physical labour.

In the course of our peregrinations through the streets of Shanghai we also came upon the shop of a Chinese apothecary (Yak-Tien), which externally bears a considerable resemblance to a similar establishment in Europe, but widely differs in respect of details. The Chinese Materia Medica is especially abundant in patent medicines, the use and application of which, it must be allowed, is frequently of the most extraordinary nature.

According to the latest researches of Dr. Hobson, of whose important services in the diffusion of European medical science in China we shall have much to say in a future page, we are acquainted with 442 drugs from among the three great kingdoms of Nature, which must be kept in every well-stocked Chinese drug-store, of which 314 belong to the botanical, 78 to the animal, and 50 to the mineral world. We shall, however, in this place only indicate those of which Chinese physicians avail themselves most frequently in the preparation of their medicines, such, for example, as birds' nests, dried red-spotted lizard, the fresh tips of stags' antlers, the shell of the tortoise, dogs' flesh, bones of animals, preparations from various parts of the human body, whale-bone, oyster-shells, skins of snakes, shark's maw and fin, tendons of deer and buffalo, dried silk-worms, their larvæ and excrement, bamboo shavings, the bear's gall, preparations from human *fæces*, scraped rhinoceros and antelope horn, rabbit dung, cuttle-fish bone, dried varnish, dried leeches and earth-worms, red marble, refuse of ivory, preparations from

toads, petrifactions, old copper money,* snow-water,† human milk,‡ &c. &c.

These pharmaceutics are brought from various parts of China, as well as from Japan, Siam, and the Straits of Malacca, and constitute an important and profitable branch of commerce. Many of them are sold at the druggist's in the raw state, when they are used as sympathetic remedies, amulets, or generally for external use. The Chinese druggists sell their medicaments for the most part in the form of powders or pills. These latter are usually made up in a capsule of bees-wax for greater facility of administration, so

* Copper coins, struck by a ruler with whose reign any memorable occurrences are associated, command a high price as health-giving amulets. Some of these, those, for instance, of the Ming and Sing dynasties, have very special healing virtues attributed to them. The currency of Tsching-tá (1506—1522) are unfailing preservatives against the perils of pregnancy, and the illnesses consequent thereon. Others are held in great honour as prophylactics. The mode of application consists in the invalid dragging them by a cord over various parts of his body in a certain prescribed order.

† The Chinese attribute the most marvellous healing powers to water, and accordingly apply it in a variety of forms, in numbers of maladies of the most dissimilar character. Water, cold, tepid, warm, and hot, as also snow and iced-water, figure among the list of medicaments, as do also rain-water, well and river-water, brackish water, dew, water from any eddy or whirlpool, or a stream, boiling-water, and steam.

‡ The Chinese women are for this reason anxious to keep their children at the breast for two or three years and even longer, partly by way of speculating upon their having a constant breast of milk, and in this singular manner make up for any deficiency of cow's milk, between the market demand and the actual supply. A Chinese who possesses five or six concubines in addition to his legitimate spouse, may thus boast of a regular dairy farm. As sailors on arriving in port are usually excessively fond of milk, which they drink in large quantities, we were not a little amazed on learning from a physician at Hong-kong the source whence in all probability had been derived the milk that was so plentifully supplied!

that the dose as it comes from the shop resembles those small wax-cakes used by house-wives for waxing their thread. One such cake contains four or six pills, called *Tzi-páu-tan*, or very costly pills, which are used as a sort of universal specific against fevers, affections of the digestive organs, headaches, &c. &c.

The most valuable and costly article in the Chinese pharmacopœia is, however, the Ginseng (*Panax Ginseng*, or *Panax Quinquefolia*), which is chiefly found in Mantchooria and the deserts to the north of the peninsula of Corea. The circumstance that the Ginseng is still a monopoly of the Chinese Government, only a few privileged individuals being annually permitted to purchase a certain quantity for its weight in pure gold, has much more to do with its efficacy as a panacea than the benefits conferred by its curative powers. The roots are about the size and thickness of a man's little finger, and break short off when bent. When cleaned they are transparent, and of a dark amber colour.

Of the Ginseng there are three qualities sold in the Chinese drug-stores. One leang or ounce of the best (the largest and finest) costs 50 dollars, of the medium quality five dollars, and of the most inferior quality one dollar. The Ginseng root is also found in Virginia, Pennsylvania, and Canada, and is thence exported to China, but the Chinese prefer that of their native forests, even though these are very much dearer, and there is hardly any difference to remark between

them. As the plant is only found in the wild state, and obstinately resists all attempts to cultivate it, its collection among the forests of North America is attended with great hardship and expense, and whereas in former years the profit realized on this article of commerce by English and American merchantmen amounted to from 500 to 600 per cent., it is now reduced to a very moderate proportion.

A more general subject of interest is presented by the shops where is sold the porcelain-ware, the manufacture of which dates from a very remote period of Chinese history, and was already a flourishing trade at the commencement of our historic epoch. Indeed we may reasonably assume, notwithstanding the beautiful specimens of the art which from time to time are brought to light, that this special branch of industry is at present in a state of decline, while of many kinds of porcelain manufacture no examples can now be shown, as the secret of their manipulation has perished. What usually interests Europeans in these shops is what is known as "crackle" porcelain,* the upper surface of which everywhere presents broken lines, so that the entire vessel appears as though it consisted of numbers of small pieces cemented to each other, the whole having very much the appearance of Mosaic. But this description also is no longer manufactured of the first quality in the present day. Antique porcelain is of extraordinary value, but specimens of modern manufacture,

* In German *Bruch-porzellan*, in French *porcelaine-craquelée*.

such as small figures, mannikins, &c., are very cheap, and are much the same as those imported to Europe.

One marked partiality of the Chinese is their fondness for suspending grasshoppers in small elegant baskets of bamboo strips, or twisted wire, in which, whatever the season or the weather, these little captives keep up a constant pleasant chirping. This custom is of great antiquity, and while one even now finds among the populace of the present day some of these chirpers thus carefully tended, there once was a time when the grasshopper was the object of universal adoration, and enjoyed all the honours of Fashion. They were indebted for this singular good fortune, according to the abbé Grosier,* to a poor scholar under the Thang dynasty, in the 7th century of our era, who to relieve his poverty fell upon the singular expedient of trading in these insects. He went into the country, selected the most beautiful insects he could find, constructed elegant little cages for them, and returning to the city offered them for sale in the most frequented streets of Tschang-gan. The idea was novel, and the wealthy upper classes speedily found a charm in having the music of the fields thus transplanted into their houses. The Empress, the Queens, the ladies of the Palace, in a word, every one was eager to possess these songsters of the meadow. There was actually an enactment passed for the supply of the Imperial Palace with the requisite number of these insects. The fashion rose to a perfect mania—the little Zirperu was en-

* *Description générale de la Chine.*

countered at every corner—it was taken out whenever a call was paid—the whole city resounded with its shrill cry. The fine arts, and every branch of industry, felt its impulse. There was no textile fabric, no embroidery, no design, no vessel, on which it did not conspicuously figure. It was represented in metal and in jewellery, and no handsome lady thought her toilette complete, unless she sported a grasshopper among her hair. This mania has died out in China, but the buzz of the insect still continues to furnish matter of amusement for the populace and children of all classes, and they are still caught in large quantities, and exposed for sale in the streets. Singular to say, all ancient and modern writers, if we are to judge by their delineations, describe these insects as *cicadæ*, whereas it was shown and proved by the researches of one of the zoologists of the Expedition, that the insect is no *cicada*, but a species of grasshopper (*Decticus*), which, so far as appears, has never hitherto been described. Very probably the circumstance that the noise made by each of these insects is very similar, gave circulation to this error of upwards of a thousand years' standing, whence people would without further examination take it for granted that the insect confined in the cage belonged to that species whose place in natural history, and whose special musical qualifications, mankind had so long been familiar with. One of these grasshoppers was kept for months in such a cage on board our ship, and chirped away lustily, fair weather or foul, even when confined in a

close cupboard. On the other hand, some *cicadæ*, with which similar experiments were made, lived only two or three days in captivity. None sang, unless when teased, or when a number more were introduced into the vessel, thereby incommoding them, and none took nourishment. It was obvious that the *cicadæ* possessed none of those characteristics which would enable them to be kept in captivity as pets, whereas, on the other hand, the grasshoppers and crickets were especially adapted for that purpose.

We were anxious to visit a variety of other interesting places, ere quitting the sultry, gloomy Chinese city on our return to the more genial European quarter. But evening was already setting in, and after sunset the gates of the city are closed, and neither Chinese nor European can after that hour obtain access to the city. Whoever is belated must find shelter for the night in the house of some hospitable friend, until with the first break of morning the gates are reopened, communication is restored with the foreign quarter, and the previous day's scene of bustle is renewed.

The next object which excited our interest was a Chinese school. Ascending a wooden staircase, we enter a room, quite empty but for a table and stools, in which a haggard woe-begone Chinese, with long tail and rod in hand, is walking to and fro, while at a table some dozen of boys of from eight to twelve are engaged in reading. Their loud accents may be heard down in the street outside. The cost of the

schools for the people is chiefly defrayed by voluntary subscriptions, foundations, &c. &c. The children of the middle classes pay for nine months' instruction, three Spanish dollars. Many teachers have more than a hundred scholars, and thus earn about 1000 dollars per annum. These, it is true, are exceptions, but teaching as a profession seems on the whole to be fully better remunerated in China than in European countries. There it is in much higher estimation, and receives better recompense. The wealthy Chinese usually engage private tutors for their children, who, as among ourselves, usually form part of the family. Elementary education is almost universal throughout China. There are but few Chinese who are not at least able to read and write. One very gratifying instance of the prevailing religious toleration, well worthy of example in the Christian states of Europe, is the presence of Protestant and Catholic places of worship in the midst of Buddhist temples, and other edifices dedicated to heathen worship. The American Episcopal church, erected in 1850, at the expense of a wealthy merchant and ship-owner of Boston named Appleton, at a cost of 6000 dollars, already numbers eighty converts. It is an extremely simple yet neat-looking place of worship, quite in the style of the chapels in the Western portion of the American Union, and has in connection with it a school numbering about forty native scholars. Every Sunday morning at ten, a sermon is preached, which is attended by most of the foreign community. Far grander and more imposing in plan and fit-

tings is the Catholic cathedral of Tong-Kadú, confessedly the finest place of Christian worship throughout China. The construction of this building was commenced by voluntary subscription in 1846, and completed in 1852, the total cost amounting to 230,000 *leangs*, or about £65,000. Within there is a large organ, constructed by one of the lay brothers of bamboo pipes, whose saddening yet inspiring notes, heard in the festivals of the Church, invite the Christian community far and wide to devotion and instruction. At present this cathedral is under the charge of a bishop of the Order of the Jesuits.

Our road from the Chinese city to the European quarter led us past an establishment which bore interesting testimony to the industrial activity of the Chinese. It is an oil factory worked exclusively by natives, and giving employment to about 400 workmen, besides 80 draught oxen. The oil is extracted from indigenous beans, and is so copious, that 1400 *catties* (1750 lbs.) of oil are procured daily, which is worth 74 *cash* per *catty* (about 3¾*d.* per lb.), and is used both for cooking and for light. The residuary oil-cake, after expression of the oily matter, is used as manure.* A workman may earn at this description of labour from 100 to 200 *cash* a-day (4*d.* to 8*d.*).

* Not alone this oil-cake, but ground horns and bones, hair from the beard, and nail-parings, rust, ashes, and even human excrement are used as manure. And it is a singular fact that the price of the latter varies according to the race of men by whom it has been evacuated. The succulently nourished flesh-eating English and Americans are in this respect in far greater demand than the more sparely-fed cross-breeds; while the Chinese, subsisting almost exclusively upon fish and vegetables, are in respect to the value of their *fæces* as manure, behind every other race inhabiting the country. The price of this manure varies with the quality from one dollar to three

As we left the manufactory, and were bending our steps towards the little Eastern gate, our gaze was suddenly attracted by a spacious and elegant mansion, evidently the property of a well-to-do Chinese. This, as we were informed by our companion, proved to be the residence of the Wuong family, which ranks among the five oldest and most distinguished families in Shanghai. There is to be seen in the neighbourhood a small stone memorial shaped like a mausoleum, which, with the Emperor's permission, was erected by the inhabitants of the district in which she lived, to commemorate the benevolence and philanthropic exertions of the mother of Wuong. The custom of honouring ladies distinguished by their virtues and benevolence, by the erection of temples, cenotaphs, &c., is by no means unusual in China, and is in marvellous contrast to the almost slavish treatment which the female sex usually meets with. Nevertheless, in the city and environs of Shanghai alone there are ninety such triumphal arches and me-

dollars the *picul*. This custom of collecting and disposing of human excrement for manure is much more extensively observed in the interior of the Empire than in the provinces along the coast. "If," writes M. Huc, the well-known missionary,—"if we were not aware to what perfection the denizens of the Celestial Empire have carried the art of manuring, one would be at a loss how to reconcile the fondness of John Chinaman for making money with the conveniences free of all charge which the proprietors of the soil everywhere erect for the comfort of travellers. There is not a city nor a village in which this is not universally the case. In the most crowded streets, or the most out-of-the-way abandoned spot, one frequently marvels to find these "cabinets" in cane-work, earth, or even masonry. One is almost tempted to believe he is in a country where the care to provide plenty of public latrines is pushed to the extreme. Utilization, however, furnishes a sufficient explanation of all these edifices."

morials to as many exemplary and philanthropic ladies. The majority of these were married, and some had attained a very great age, one having died at 104 years, and another at 115 years of age! *

In the house of Wuong, who stands in high repute among the Europeans as a merchant and ship-owner, we were received with the most gratifying hospitality. As soon as we entered the house, an attendant immediately presented tea in small cups, which, in conformity with the usages of the country, had to be swallowed in all its native bitterness without admixture of sugar or milk. Immediately after an old nurse made her appearance, and struck up with our excellent conductor, Mr. Syles, who seemed to be everywhere welcomed by the Chinese, and was well acquainted with the family, a long conversation upon the most diverse subjects. At length the master of the house himself made his appearance, a dignified, stately man, arrayed in a light elegant grey silk frock, but in deportment and externals not differing in the very least from his Chinese attendants, and himself conducted us round the house. He seemed to feel pleasure in the opportunity of baring to the view of a stranger the very penetralia

* In every part of this extensive empire, travellers encounter these national tributes to the memory of distinguished women, and Dr. Medhurst, as also Fortune and other authorities upon China, relate numerous instances of these remarkable memorials. One of these, an archway of stone, is spoken of by Medhurst as of singular beauty. It is half a mile from the city of Kwang-Tib, and was erected by the community of that region, with the approval of the Emperor, in honour of a lady of that city, of singular piety and benevolence. Over the portico are inscribed the words "Kin-sin-tsaé-tschung" (a golden and perfect heart precisely in the middle).

of his beautiful abode. We wandered through numerous apartments simply yet elegantly furnished, with various antechambers and corridors, among which were interspersed little plots laid out with dwarf plantations, artistically-designed grottoes, and "rookeries." In one of the rooms was a "punkah," an article of furniture rarely met with in a Chinese household. On reaching the library or study, our host bade us be seated, while he again ordered tea to be served. This small but pretty apartment was covered all round with inscriptions in Chinese (chiefly maxims from Confucius), which, written on rolls of white paper, were suspended on the walls. While sipping our tea, and engrossed in conversation, an attendant appeared with somewhat thick cloths, steeped in hot water, with which to wipe our faces and hands. The evaporation of the moisture lowers the temperature of the skin, and has so refreshing an effect, that one cannot but feel surprised that this custom is not more extensively patronized in hot countries, or put in practice by ourselves during our hot sultry summers.

With respect to ourselves, what appeared most to interest our Chinese host in his silken attire was our apparel. He felt over and over again the black alpaca coat, which was worn by one of the members of our Expedition, and remarked, "these Western races are truly marvellous people; they wear far more clothes than we do, yet they perspire less." And thereupon Wuong mopped his face twice with the towel, which in the mean time the attendant had again

dipped in the hot water, and thoroughly wrung out. As we were taking our departure, our courteous host accompanied us to the threshold.

In the portico were a number of wooden tables lacquered with red varnish, on which were inscribed in large golden letters of the Chinese character the titles of honour of the family of Wuong, which on festive occasions were drawn in front of the head of the family as he sat on his sofa.

After this ramble through the Chinese town, we returned to the "Strangers' Quarter," where we came upon a widely different mode of life. Here everything is arranged upon the European model, and the attention is only diverted by those minor accessories, in which the climatic conditions have necessitated some variation. The houses are universally lofty, roomy, and agreeable, usually surrounded by a garden, and many of them present an almost palace-like aspect. More even than to the merchants in Broadway is the designation of "merchant princes" applicable to the foreign merchants of China and the East Indies, for it is among them beyond any other class on the globe, that there prevails a luxury almost princely in its magnificence. In such a place as Shanghai, which can present to the educated foreigner such a meagre equivalent for his numerous intellectual privations, each man endeavours in the readiest possible way to render his material existence as comfortable and agreeable as he possibly can. This leading principle one sees illustrated and carried out in practice in the splendid de-

signs of their residences, and the exquisite refinement and comfort of their internal arrangements, as well as in the scrupulous attention paid to the cellar and the "cuisine."

On the ground-floors are the counting-house and stores, on the first floor the drawing-room, the dining-room, and the sleeping apartments. All these various chambers are decorated with as much attention to comfort as good taste, and almost every single article bears on it the solid, unmistakeable impress of its English origin. Even into the most minute details all the genuine comfort of an English drawing-room is introduced, increased even, if that be possible, by the adoption of a few customs peculiar to the peoples of Asia, such as mats of fragrant materials placed before the doors and windows, Punkahs, which, kept in motion by Chinese servants, keep up a constant current of fresh air, while through the verandah, or the open glass casement, where the family sit swinging to and fro in an American rocking-chair, a delicious cool breeze blows in the mornings and evenings. A well-appointed numerous household is constantly hovering around, eagerly intent to anticipate the slightest wish of their employers. Probably in no part of the world are there more intelligent or punctual servants than the Chinese. They get through the utmost variety of work with consummate tact, method, and facility. Everything is done rapidly and noiselessly, and one is served with the utmost regularity, without being pestered with too much attention.

The members of the *Novara* Expedition experienced in

Shanghai the most hearty hospitality. Even the presence of the various embassies, and the momentous nature of the operations of which the Gulf of Petcheli was the scene, proved no barrier to a most flattering reception being accorded to this the first maritime Expedition of a German power. Foreigners of the most widely divergent races and standing, —consuls, missionaries, merchants, naturalists, journalists,— each in his own way vied with the rest in ministering to our comfort, and in aiding us in the prosecution of our objects.

One of the most distinguished of the physicians and missionaries of the London Missionary Society, Dr. B. Hobson, who since 1838 has resided at Canton in the honourable capacity of a "medical missionary,"* and who, a few months before our arrival, had, in consequence of the outbreak of hostilities, removed to Shanghai, was so kind as to furnish us, out of his own rich treasures of Chinese lore, with much valuable information, and acquainted us with the various objects aimed at by the praiseworthy activity of the London Board of Missions. This body by no means confines its operations to the diffusion of tracts and works relating to Christianity published in the Chinese language, but combines simultaneously with that sphere of action the excellent

* In the hospital, in what is called the western suburb of Canton, which was under the charge of Dr. Hobson from 1848 to 1858, the annual number of patients of both sexes under treatment averaged upwards of 20,000. During the most unhealthy season (May and June) the number imploring assistance frequently amounted to from 3000 to 3400. In the dispensary there were, morever, from 200 to 250 patients, who received medical advice three times a week, and were supplied with medicaments gratuitously.

idea of ministering to the physical necessities of the poor and sick Chinese, and of helping them in their need. While able, eloquent Dr. Muirhead presides over the missionary schools, and the not less zealous Mr. Wylie superintends the printing of the books, our highly educated friend Dr. Hobson takes charge of the hospital, the cost of which is defrayed partly by the Missionary Society, partly by the European community.

The building itself is rather small and unpretending, and can at most accommodate only thirty patients. But it was erected chiefly for those cases which in England it is customary to classify in the general category of "accidents," injuries, that is, sustained unexpectedly, or in a riot, &c. &c. Every day between twelve and one o'clock a consultation is held, and treatment provided gratuitously. Hither flock hundreds of invalids, to avail themselves of this benevolent arrangement, and while Dr. Hobson is busy giving orders and dispensing drugs in his small apartment, a native convert in the waiting-room is preaching the Living Word to those who come for advice.

We passed an entire hour in the dispensary, not merely for the purpose of witnessing the various descriptions of cases, mostly of a surgical nature, but also to catch many an instructive remark from the lips of Dr. Hobson. Thus he remarked, as the result of a medical practice of more than sixteen years, that the Chinese are uncommonly soon affected by the use of mercury and quinine. A very small dose of

either of these drugs very speedily shows a marked effect. Oddly enough, quinine, as a tonic and febrifuge, is unknown in the Chinese pharmacopœia, and is almost exclusively prescribed for the cure of the opium-smoking form of mania.

In China, a physician is treated with great distinction, and is usually designated as szí-yaý (the honourable teacher). Of late years cholera (tschan-kan-tschúi, literally "the contracting of the tendons") and small-pox had committed fearful ravages among the populace, and the appalling havoc committed by the latter-named disease gave occasion for the publication by the English missionaries of a short treatise translated into Chinese, on the importance of vaccination. Among children especially the mortality caused by this fell scourge was very great, and the instances of *leucoma* and loss of sight resulting from the disease appear to have been very numerous.

Dr. Hobson, who in 1851 had published a volume of Physiology in the Canton dialect, has also completed a handbook of Practical Surgery, with 400 woodcuts, and, like the preceding, had had it printed by native workmen. Even the drawings were drawn on the wood and cut by native artists after English originals. Many of the scientific phrases contained in these works must have required to be entirely reconstructed, or else expressed by a circumlocution. Dr. Hobson intended to follow up these two splendid undertakings with a fresh work upon Pharmacology, as also a treatise upon the diseases of women and children, both, like their predecessors, to be in the Canton dialect, as that most universally used.

The Chinese, however, possess themselves a pretty comprehensive medical literature, whence we may infer that from the earliest times they paid special attention to the science of medicine. According to a Chinese tradition, the Emperor Schinung, 3200 years before our era, collected a "Materia Medica," and 570 years later, the Emperor Hwang-té is said to have written a work with the title "Sonwán" (open questions in medicine). The celebrated work, "the Doctrine of the Pulse," by Wang-shu-fo, was written in the reign of Tsche-Hwang-té (the book-burner), about 510 B.C. A second edition of this work was published in the reign of Kang-he, in the year 1693 of our era. About A.D. 229 the Chinese physician Tschang-kae-pin wrote the first Chinese work which, in addition to the theory of medicine, also contained prescriptions. The great "*Materia Medica*" of China was compiled by Li-tschi-kan, and was published by his son during the reign of Wan-Leih, about A.D. 1600. The most important medical work in Chinese is the E-tsang-kin-ksen, or "the Golden Mirror of Medical Authors," collated by Imperial authority from the best works of earlier native authors, especially from the "Nan-king," and the writings of Dr. Tschang-kae-pin. This was published in 1743 (the seventh year of the reign of Keen-lung), and consists of thirty-two volumes 8vo, with upwards of 400 woodcuts.*

* We saw this huge work in the private library of the chief of the medical staff at Hong-kong, Dr. W. A. Harland, who had conceived the idea of publishing a more important work upon Chinese drugs, when death struck down this distinguished and most industrious gentleman while in the active discharge of his duties.

The information furnished us by Dr. Hobson with reference to the terrible forms of leprosy in China are of so much interest, general as well as special, that we believe we shall not transcend the scope of this work, if we give in these pages the valuable data upon the subject in all their completeness.

The Chinese consider leprosy as the most appalling of diseases, since, while resisting all means of cure itself, it attacks others, and they accordingly avoid in the greatest terror all those who are smitten with it. Like the people whom Moses brought out, the Chinese regard leprosy as a direct consequence of impiety, an expiation for sin committed. For this reason those afflicted with leprosy are rarely regarded with pity. No hand of sympathy is stretched forth to give aid, no heart feels itself impelled to alleviate their hopeless condition, and thus the most wretched of all are in the eyes of the masses simply objects of disgust and of horror. Leprosy is called Lae in Chinese. In the Imperial dictionary of Kang-he Lae, is described as a very evil kind of disease, which breaks out upon the skin in the form of blotches and pustules. Gutzlaff and others acquainted with Chinese make use however of the words Ma-fung to express leprosy, which is also used by native writers to indicate the disease.

The Chinese physicians consider leprosy as a subtle, penetrating, poisonous effluvium which has infected the blood. They profess to recognize 36 different kinds of leprosy, among which they enumerate every form and variety of

Lichen, Scabies, Psoriasis, and Syphilis. Common as the disease is in Southern China, it is unknown in the North; its area of manifestation seems to be confined within the tropics. It is, however, related of many Chinese in good circumstances, that when attacked by leprosy they have removed to Pekin, where after a two years' residence they have lost all trace of the infection, which, however, broke out anew immediately on their return to the South.

Leprosy does not seem by its physical effects to shorten life. There are in China numbers of aged people attacked with this disease, and in the Lazar-house at Canton there is still living an old leper upwards of eighty, who has long found an asylum in that hospital as an incurable. Suicide is not uncommon among those thus sorely smitten, when they usually poison themselves with an over-dose of opium, hang themselves, or drown themselves, for death, they say, makes them once more clean. Although the Chinese believe in the hereditary transmission of leprosy, they nevertheless think that the disease becomes of a milder type in the third generation, and entirely disappears in the fourth. Marriages never take place with the offspring of leprous parents or grandparents, but on the other hand the lepers and their children intermarry among themselves. A leper however of the fourth generation would only ally himself with a girl of the same degree of exemption. The children of such a union would be considered sound and free from leprosy, and would no longer be excluded in any way from social rights.

But the Chinese believe leprosy not alone hereditary, but also infectious through the very slightest contact. Hence the father abandons his own child; the children flee from their parents: they will not eat and drink with them, will not sit in their company, will not use the chairs which have been sat upon by the leper, until at least the surrounding atmosphere has been fumigated with a torch. Even the law declares leprosy to be a contagious disease. A wealthy leper durst not venture to leave his own room, where he is excluded from all communication with the outer world, without exposing himself to the danger of being arrested by the police, and mulcted in a heavy fine, or else sent to what is called the Leper village near Canton, an abode of human woe and misery, which even the leprous regard with horror.*

As the Chinese physicians regard leprosy as a taint of the blood, and in their treatment adopt Hahnemann's principle of *similia similibus curantur*, they prescribe by way of

* In the Leper village near Canton, which is under the superintendence of a Chinese physician, there are about 100 lepers of both sexes, each of whom receives about 20 cash (not quite one penny) daily for his support. The superintendents stated to Dr. Hobson, who repeatedly visited the village, as the result of their many years' experience and observations, that leprosy is not in every case transmitted from parents to children; that several wives of leprous persons have no trace whatever of the disease, but that these women in all probability belong to those of the third and fourth generation, who wholly escape. The Chinese overseers and attendants, however, can have had as little opportunity for remarking upon the breaking out of leprosy among the children of those whose parents were entirely exempt from it as they had of informing themselves with accuracy as to the various forms and rapid diffusion of the disease in the case of the one, or its mild type and gradual disappearance in the other. Perspiration or suppuration in the diseased parts are never remarked in these patients.

remedies the most repulsive and disgusting substances which they can select from their *Materia Medica,* such as the saliva of the toad, beetles, snakes, worms, scorpions, centipedes, &c. &c.

Dr. Hobson considers leprosy, when once fully developed, to be incurable. Such remedies as arsenic, salts, acids, in short alteratives, occasionally prove efficacious at an early stage of the malady, as also Iodine baths, and mercurial friction. External remedies however are usually found to be unavailing in reaching the root of the disorder, its seat lying deeper than an ordinary affection of the skin.

Of late years the seeds of the Tschaul or Tscharul Mugra (one of the order of *Flacourtiaceæ*), have been administered for leprosy by several English physicians in India, and certainly, in some instances, with such results that the most sanguine hopes were entertained of its efficacy in all cases of leprosy. Dr. Hobson informed us that Dr. Mouatt, of the Medical College, Calcutta, who was the first to discover the remarkable properties of this plant, sent him, when he was at Canton, a considerable quantity of these seeds for the purpose of experimenting with them.* They were ground into a coarse pow-

* At the Refuge for the Destitute (*Monegu choultry*) at Madras, where Dr. Mudge was at the same time instituting experiments lasting over two years, exhibiting these same remedies in every form and shape of elephantiasis, to which cases a special ward had been set apart, rarely entertaining fewer than 100 patients, that gentleman found it to be perfectly inoperative, and he accordingly entirely ceased prescribing it. In lieu of the Tscharul Mugra, the Hindoos in cases of leprosy make use of what are known as the "Asiatic pills," consisting of arsenic, pepper, and the root of the *Asclepia gigantea.*

der, and in that state administered twice a day at considerable intervals in doses of about 60 grains, the external sores being at the same time rubbed with the oil pressed out of the seeds. The cure must be persevered in without interruption for six months, and must be from time to time aided by saline purgatives. The first symptom of improvement shows itself in an abatement of the prominence and redness of the eruption, and the appearance of white scales all round it. This remedy has long been known to the Chinese, but those who are acquainted with the active curative principle contained in the seeds of the Tscharul Mugra, keep the secret to themselves in their own interest.* Dr. Hobson assured us that he had cured two cases of leprosy taken early, and in a very mild form, by the administration of these seeds, and had seen several greatly improved by their use; but this experienced physician is, like others, distrustful of the efficacy of the seeds of Tscharul Mugra in cases of fully developed leprosy, which, according to his view, is pre-eminently a taint of the blood,—a poison which can never again be eradicated from the system. In cases of scrofula, these seeds have been found serviceable.

Like their brethren of the London Missionary Association, the various missions of the United States of North America

* In an old Chinese medical work occurs the following remarks upon the plant: "Tae-fung-tzi. Taste, acrid and burning: imported from the South (this obviously alludes to the Straits of Malacca). Acts as an alterative on the blood, and is accordingly useful in cases of leprosy, when the blood is corrupted. The oil pressed from the seeds is also used as a remedy in ulcers, eruptions, and psoriasis, and for killing worms. This drug must be exhibited in the form of pills."

display the most praiseworthy zeal and activity of co-operation upon every question.

That eminent philanthropist, Dr. Bridgman, who had, for more than a quarter of a century, been an active and highly esteemed missionary, was in 1858 at the head of the American Episcopal Mission, and was one of the oldest, as also among the most highly respected, denizens of the little foreign settlement. This meritorious citizen died at Shanghai, on the 29th of November, 1861, after having spent upwards of thirty years in China in the promotion of the Christian faith and the advancement of knowledge, deeply lamented by foreigners, as well as by the Chinese, who always found him their true and confident friend. This gentleman had the kindness to assemble under his simple but kindly roof the various members of his mission, who are no less useful in increasing our acquaintance with the Chinese language and literature than in diffusing the blessings of the gospel, thus furnishing the members of the *Novara* Expedition with an opportunity of personal intercourse with these gentlemen. We here became acquainted with Mr. Wells Williams, so highly esteemed and so widely known for his profound historical and philological works * respecting China, as also with Messrs. Syle, Aichison, Macy, Jones, and Blodgett, missionaries distinguished for their extensive acquirements in Chinese; and in the course of this

* Geography, Statistics, and Natural History of the Chinese Empire—New York, 1847; Tonic Dictionary of the Chinese language—Canton, 1856; Chinese Commercial Guide. Fourth edition—Canton, 1856.

agreeable and interesting intercourse were so fortunate as to obtain information respecting a variety of topics, many of them suggested by Dr. Pfitzmaier, and recommended by him to our investigation. On most of these topics accurate intelligence was in the course of our voyage transmitted to the Imperial Academy of Sciences; of the remainder elaborate and comprehensive particulars are reserved for the scientific publications of the Expedition.

We may, however, more closely investigate here one topic of universal interest, namely, the latest researches respecting the very remarkable, little known, half-savage tribe, known as the Miáu-Tze.

These extraordinary human beings are usually encountered in the provinces of Kwei-chan, Yun-nán, Szechuen, Húnán, Kwang-si, and the western part of Kwang-tung. The wild tribes of the island of Formosa belong, on the contrary, to an entirely different race. In the Imperial Dictionary of Kang-hi, the sign 苗, *miáu* (a compound of the words "flower" and "meadow"), signifies "germinating seeds," "blades of grass springing from the seed-vessels." The sign 子, *tsz*, on the other hand, is that usually employed to express son, or descendant. In accordance with this explanation, the Chinese also seem to consider the Miáu-tze as children of the soil, as aborigines, or indigenous inhabitants of the country. In their descriptions of this singular people they divide them into "Sang" and "Schuh." *Sang*, ordinarily used when speaking of fruit, signifies "green, unripe,"—*schuh* again means "ripe," or, when

speaking of food, the former signifies "raw," the latter "thoroughly cooked." By these means they discriminate them into the savage independent "green" Miáu-tze, and the subjugated more civilized "ripe" Miáu-tze. The subjection and civilization of these latter are however as yet very problematical. As in days long gone by, so up to the present hour, the Miáu-tze are restless and troublesome neighbours to the Chinese. Dr. Bridgman has lately translated into English the sketches made by a Chinese scholar upon the Miáu-tze, during his travels in the province of Kwei-chan, by which he has added greatly to our stock of information respecting those "children of the soil;" the work consists of two volumes in 8vo, containing about 82 sketches or delineations. Each of these fills one page, the handwriting being condensed or expanded according to the amount of the contents, while that opposite contains an illustration elucidatory of the text. This very rare work divides the Miáu-tze into 82 tribes according to their customs, more or less savage, very few of whom possess any trace of a written language, recording the most important events simply by certain marks on a stick, or by what are called "tallies," and subsisting upon wild fruit, fish, and the flesh of wild animals. They usually go about bare-footed, are very scantily clad, lead a life full of privation and hardship, and in all their troubles have recourse to the invocation of the evil spirits. Only very few of their race follow agriculture, or any branch of industry, or worship

Buddha in their festivals.* Some of these however seem to be more or less crossed with Chinese blood, as, for example, the Tsche-Tsai-Miáu, in the district of Kutschan, whither the rebel Má-sán-pái formerly fled with 600 of his followers, when his attempt, under his feudal leader, Mu-san-Kwei, to overthrow the reigning dynasty, failed of success. Many of these fugitives formed connections with the native women, and their descendants are now known by the name of the six hundred savage Miáu families.

Adjoining Dr. Bridgman's residence, is a school maintained at the expense of the mission, in which twenty-four Chinese girls are during five years instructed in reading and writing their mother tongue, in arithmetic, and in the rudiments of Christianity, after which they are provided with a small portion and married to Chinese Christians of good character. Selected under the idea that very favourable results may be anticipated, if the various subjects in which the scholars are

In the figures of the Chinese original, which represents the Lo-háu-miáu or Buddhist aboriginal, Buddha is represented in a cavity of a rock. Two burning lamps are standing beside him, one on each side, and in front are two worshippers in devotional attitudes, while at a short distance one perceives a woman with a little child, who is approaching the divinity. The men wear fox-tails as ornaments to the head, and their long locks hang loose and dishevelled, far below the shoulders. Every year on the third day of the third moon, our Chinese traveller goes on to state, old and young, man, woman, and child, bring offerings of fruit to Buddha, and for that and the three next succeeding days, they sing and dance, and at the same time make offerings of all manner of *cooked* food. From their custom of wearing a fox-tail on their heads, which was also common among the ancestors of the present Mantchoos, and that these wild tribes reverence the image of Buddha, Dr. Bridgman is disposed to class them amongst foreign nations.

instructed are imparted to them in their native language, English is entirely omitted. Interesting and extraordinary, however, as it is to hear American ladies imparting instruction in the Chinese language, this method of teaching has many draw-backs, and the mission itself and society in general would derive far more advantage, if these poor females should be instructed in English, thus widening the horizon of their knowledge.

In the boys' school, also supported by the mission, another method of teaching is in use. The children learn an epistle first in Chinese, afterwards in English, when they are called upon to translate the Chinese into English. Thus we heard one lad rehearse the Book of Ruth, first in Chinese, and then in English. He was then examined in English upon the meaning of certain passages, when he replied with great accuracy in the same language. Education in these schools is mainly intrusted to ladies. Two of these, Miss Jones and Miss Conover, displayed remarkable attainments in Chinese, besides their really marvellous store of information. None of the teachers are married, while none of the wives of the missionaries interfere with the school, but employ themselves in superintending the education of their own children. We found forty Chinese boys receiving their education at the expense of the mission, whose parents have to sign a written engagement that they will not withdraw their children from the institution for a period of ten years, in fact, till the completion of their education. This precaution is absolutely

necessary, owing to the fickle nature of the Chinese, else it would be a by no means rare occurrence for the parents to insist on the child returning home, possibly just at the critical moment when the beneficent influence of Christian culture is beginning to spring up in the soul. On the whole, this mission has splendid results to show. We saw one scholar, who at present forms one of the staff of teachers, and speaks and writes English absolutely better than his native language. Another young Chinese, sent out at the expense of the mission, spent eight years at Yale College in Massachusetts, and at present earns his maintenance by translating English documents into Chinese and *vice versâ*, for the mercantile houses of the place.

Dr. Bridgman is at once founder and president of the first scientific association in Shanghai, the "North China Branch of the Royal Asiatic Society," including among its members almost all the foreigners resident in Shanghai, who assemble regularly every winter for intellectual and literary recreation, and publish from time to time in a periodical of their own, details of the efforts, adventures, and experiences of their colleagues in promoting the objects of the association.

An extraordinary meeting was held in honour of the *Novara* voyagers, at which about forty persons were present. The President, Dr. Bridgman, welcomed our commander and his subordinates with a few cordial remarks, which was responded to by Commodore Wüllerstorff, after which the writer of these lines had the honour to deliver in English a

brief address, touching on the chief aims of the Expedition and its scientific objects, stating that its chief purpose was less the promotion of purely scientific knowledge, than by ample, long-continued practice to provide material of suitable quality for our youthful budding navy, to unfurl the standard of Austria in localities where it had never before been seen, to effect treaties of commerce with foreign nations, to knit the various capitals which we should visit in our cruise by the tie of science, to open correspondence with their various institutes, and to make collections, chiefly of those objects of natural history, the acquisition of which, owing to their great value or the difficulty of transport, is almost impossible to the single traveller. The hearty reception which had been accorded the Expedition in Shanghai rendered it doubly incumbent on us to explain the various purposes we had in view, and the original points of inquiry to which we were restricted by the track definitely assigned to us, as also to account for the shortness of our stay in each port, and the fact that our prescribed route led us sometimes to visit places either politically or nautically well known.

After the close of this short lecture, several of those present rose to speak, amongst others the United States Plenipotentiary, Mr. Reed, who expressed his sincere pleasure at having been privileged during his stay in China to meet with the commander of an Austrian frigate engaged with his gallant companions in so grand a mission.

Mr. Reed spoke in high terms of the scientific exertions

being made by Germany, and recalled in animated terms the splendid services of A. von Humboldt, whom the news of the death of Washington (14th Dec. 1799) found already occupied in scientific research in the primeval forests of South America, and who still (August, 1858) continued to display such marvellous intellectual activity.

Besides Mr. Reed, we also made the personal acquaintance of the French Plenipotentiary, Baron Gros; the ambassadors of England and Russia were already gone, the former to Japan, the latter to the Amur. We were introduced to Baron Gros at the house of M. de Montigny, the French Consul, who during a residence of many years in China has occupied himself not alone with upholding the prestige and influence of "*la grande nation*," but has also rendered conspicuous services to science and agriculture. To him is due the credit of having in 1847 dispatched to Europe the first seeds of what is called the Chinese sugar-cane (*Sorghum saccharatum*), and of having introduced to agriculturists that remarkable species of grass, with which, in consequence of its many useful qualities, hundreds of thousands of acres have since that period been planted in various parts of the globe. M. de Montigny distinguished the members of our Expedition in every way, and presented them with numerous specimens of seeds from Northern China.*

* Among these there were, besides a small quantity of Sorghum, several species of vegetables, which are suited for cultivation in temperate climates, such, for example, as Poussén, Pa-tsé, Pon-ta-tsé, with which since our return experiments have been instituted in various parts of the Austrian Empire. M. de Montigny has also since

The visit paid to Baron Gros by two of the naturalists left by no means an agreeable impression. The French ambassador is a tall, commanding, powerfully-built man, about fifty years of age, with a full, round, beardless face covered with freckles, and hair of a light colour. He seemed pleased to speak of himself and his connections, and repeatedly proclaimed himself an admirer of German men of science, who was in correspondence with M. von Humboldt. "You know," quoth the Baron, apparently desirous of explaining his meaning, "he that wrote the Kosmos." The two members of our Expedition coloured up; to pronounce the name of Humboldt to German men of science, and deem it necessary to state his literary claims, was sufficiently embarrassing. One of them endeavoured to turn the conversation to the gulf of Petchi-li, whence Baron Gros had just returned after the ratification of the treaty of peace. He showed them a hasty sketch of a portion of the great wall of China, to which he had paid a visit when in the gulf of Petchi-li, and had made the sketch on the spot. The natives with whom he came in contact during his stay in the North he described as destitute and poor to an extraordinary degree, but anything but hostile to foreigners. They asked for with eagerness and seized with avidity the entrails of animals which the sailors were about to throw away; on empty bottles being thrown

our return sent, quite lately, a large quantity of Chinese seeds by way of souvenir, and despite illness, is so much interested in forwarding the objects of the Imperial Expedition, that he was a short time ago decorated with an Austrian order.

overboard, they swam a considerable distance to rescue them. With respect to the political events in the Pei-ho and Tien-Tsin, his Excellency, whether out of diplomatic reserve or for other reasons we do not know, preserved profound silence.

* We are however in a position to furnish an extract from the note-book of an English sailor, left in charge of the yacht of an English merchant at Shanghai, who accompanied the expedition of Lord Elgin to the Pei-ho as coxswain. Notwithstanding the occasional *naïve* expressions made use of, it is a valuable narrative, such as may call up many strange reflections in the mind of the reader:—

"1858. May 30th.—The river Pei-ho is about 150 yards wide at its mouth, and at dead low water varies from $1\frac{1}{2}$ to $4\frac{1}{2}$ fathoms in depth. On the bar, which is two miles wide, the difference between the ebb and the flood is from 9 to 10 feet. Easterly winds cause the highest tides. In the interior, near Tien-Tsin, the river is from 3 to 6 fathoms deep, and from 50 to 100 fathoms wide. Countless villages stud the banks. The houses are built of clay or straw. The boys run about naked to an age of eight years. It is a very wretched population. The coolies plunge into the water after the empty bottles which are swimming about. They seem exceedingly willing to be serviceable to foreigners. At Tien-Tsin, ten and a half hours from the mouth of the river, the thermometer marks 89° Fahr. in the shade. Lord Elgin is living in a private house on shore. The interpreters live in a passenger-junk. Provisions are on the whole cheaper than at Shanghai. An immense number of natives keep crowding open-mouthed round the "barbarians" and their ship during the entire day, hundreds following us at every step. Almost all the shops are shut, through dread of the barbarians."

"4th June.—Thermometer 95°. The people very willing to supply the strangers with water, tea, &c. The natives are on the average from five to five feet three and well-proportioned. Some of them are "tremendously" fat, with huge heads. Among the entire lot I could not see one single woman. The streets are narrow, filthy, and uneven. Saw several hand-carts, which were used to convey water from the river to the village. On each barrow there could be from six to eight buckets of water. There were also plenty of mules and donkeys, but very few horses."

"June 18.—This day the Russian minister concluded his treaty. A Russian courier starts to-morrow for St. Petersburg with dispatches."

"June 26th.—At 6 P.M. to-day the treaty with England was signed. Went in procession to the town. All the shipping dressed with flags, and manned yards. The festivities went off in the Yamun. Lord Elgin sat at the middle table, with a Mandarin on each side of him. I hear their names were Wa-schu-nau and Kwei-liang.

A variety of circumstances, however, may have contributed to make the Baron less susceptible to every other thing than his everlasting "I." Baron Gros had in fact been sub-

The first named is a strong, corpulent man of about 45; the latter is much older, and seemed very much dejected; he has however just recovered from sickness, which may account for it. After the ceremonies of signing and sealing had been gone through, they all partook of refreshments provided by the Mandarin. Lord Elgin proposed a toast to the health of the Emperor of China, and to the future friendship of the two nations, which was responded to by the Mandarins. Shortly after the assembly broke up, and we all marched home to the excellent music of the flag-ship's band and the bugles of the marines. The whole affair lasted about three hours and a half. It was full moon, and a splendid night.

"June 27th.—This afternoon the treaty with the French was signed. Returned to their ships by torch-light, port-fires, &c. &c. Ki-ying, the Mandarin who assisted in bringing about the treaty, was sentenced to be decapitated, as he was blamed for opening the door to the barbarians, but he has since been pardoned."

"July 3rd.—News came from Pekin that Ki-ying has committed suicide by cutting his throat."

"July 4th.—Thermometer 96° on board, despite awnings and sprinkling the roof of the wheel-house with water!"

"July 6th.—Left Tien-Tsin. After a long, tedious, and tiresome passage of 15 days we reached Shanghai once more on 21st July, all well.

"Price of provisions at Tien-Tsin, as contracted for on 23th May, for the supply of the English fleet:—

Oxen (average weight 4 piculs, or 533 lbs.),	the carcase	...	$10
Sheep, ...	„	...	2
Hens, ...	per dozen	...	1
Geese and ducks, ...	„	...	2
Eggs, ...	per thousand	...	3
Vegetables, ...	picul=133⅓ lbs.	...	1.50
Rice, ...	„	...	5
Sugar, ...	„	...	6
Yams, ...	per dozen	...	1
Pears, ...	per hundred	...	1
Apples, ...	„	...	1.50
Ice, ...	per lb.	...	16

"All articles to be delivered of the best quality. The prices are reckoned in American dollars. Every morning a boat was sent off to the *Coromandel*, on board which the purchases took place."

jected to the very great inconvenience of the Propellor *Audacieuse*, which had been brought from France, having suddenly become unseaworthy, so that he had to abandon her. She was making from 100 to 140 tons of water per diem, and there was nothing for it but to have the vessel taken with all speed to the docks at Whampoa for repairs, while the envoy had to return to Europe by another opportunity. Moreover, the Baron had been attacked by a disorder of common occurrence in hot countries, namely, a furuncle, which is exceedingly painful, and obstinately resists every remedy. Whoever is of a constitution liable to such attacks is never free from them till he gains a colder climate. In the case of the unfortunate Baron, these went on continually increasing, and on one of his compatriots being asked in society what was the cause of the absence of the French ambassador, replied with an arch look, "*le pauvre baron a quatre-vingt cloux.*" In fact, the annoyance caused by this malady is redoubled by the little sympathy accorded to those afflicted with it, who are only rallied or laughed at.

Another personage who, at the period of our stay in Shanghai, attained a rather unenviable notoriety by his strange conduct, and did but little to raise the reputation of France in these latitudes, was the Marquis de Chassiron. By his marriage with one of the Princesses Murat (since dead), he was allied to the Emperor of the French, whom he occasionally spoke of in an off-hand way as "mon neveu, l' Empereur." Meagre, wizen, spindle-shanked, and ringletted,

in coloured check pantaloons, blue frock, open-work cravat of Gros de Naples, and dancing-master's pumps, resembling much more a second-rate Paris dandy than a diplomatist, it seemed as though he must have been dispatched to this out-of-the-way part of the world for quite other than a diplomatic object, although he took great pains to spread the report that he had been appointed the successor of Baron Gros in the Embassy.

One day the Commodore and some members of the Expedition received an invitation from the kind and hospitable English Consul, Mr. Brook Robertson, to be present at a reception at the Consulate of the Táu-Tái, or highest Chinese official of the city.*

We the more readily congratulated ourselves on this invitation, as, owing to the sudden departure of the Táu-Tái, we missed the opportunity of paying him a visit in his own palace in the city. Punctually at the appointed hour, 2 P.M., a formal procession was seen approaching the buildings of the English Consulate. In front were carried numerous titles and insignia, then the Táu-Tái in a large and handsome sedan-

* The Táu-Tái, whose authority extends over the three prefectures of Soo-Chow, Sung-Kiang, and Tai-tsing in the north-east of the province of Kiang-ti, is under the governor of Soo-chow, and has resided at Shanghai ever since that port was thrown open to trade. His salary by law is only 4000 *taels* (£1445), but the various perquisites and emolument attached to it make his actual income about 365,000 *taels* or £105,000 per annum; out of which he has, however, to defray all expenses of subordinates, &c.; so that the net annual income of this post is estimated at from 25,000 to 30,000 *taels* (£7000 to £8700). Besides the Táu-Tái there is only the Tschi-hien, a sort of magistrate who lives in Shanghai, and trades with the foreigners.

chair, and finally a noisy "following," in the shape of a rabble of servants. Mr. Robertson received the Táu-Tái at the threshold of his house, and greeted him with the customary Tschin-Tschin, moving the hands closely folded a few times over the breast.

All present kept the head covered, making in like manner a few Tschin-tschins, and then accompanied the visitor to the reception-room, in which were five stools, the seat of honour being on the left. As soon as the Táu-Tái was seated, the rest took their seats, and a proposition was made in consequence of the truly tropical heat, contrary to Chinese notions of courtesy, to divest one's self of one's head-gear. The Mandarin, at all events, seemed as little loth to lay aside his funnel-shaped straw-cap, with its blue button and peacock's feather, as the Europeans present to doff their uniform caps.

The presentation of the commander and the author of this narrative by Mr. Meadows, who acted as interpreter, gave the Táu-Tái an opportunity of inquiring of the English Consul whether our frigate had been at the gulf of Petcheli. Mr. Robertson replied that the *Novara* was the first war-ship of a German power which had ever visited the Yang-tse-Kiang and Wusung rivers, and that the frigate was bound on a voyage of scientific discovery. This led to a running fire of questions and answers, during the course of which two attendants were engaged alternately in filling a small pipe with tobacco, which they handed to the Táu-Tái. The latter drew a few puffs, permitted the smoke to escape through his

nostrils, after which his pipe was again replenished with a small supply of tobacco.

We next had an example of the custom, already mentioned, of wiping the face with a hot damp towel, one of the attendants dipping a rather thick piece of linen cloth in a tub of hot water, which was then wrung out, when the cloth was presented to the Mandarin, who, without in any way interrupting the conversation, from time to time wiped the perspiration from his brow.

The Táu-Tái had a well-made, handsome figure, pleasing, rather intelligent, features, a round, smooth, delicate face, without any trace of beard, eyes as usual drawn up at the outer corner, small elegant hands, and beautifully tapered fingers, with very long nails. His dress was very simple; he wore, for the sake of coolness, a shirt made of thin bamboo shoots, with a long, yellowish, loose surcoat, white drawers, and, instead of the usual Chinese shoe with its high cork soles, or white thick gaiters, he wore light shoes of European make. His head was covered with a cone-shaped straw-hat of very fine texture, with a red tassel and blue knot in the midst, and a dark green peacock's feather, extending horizontally backwards.

Business over, a table was covered, and the Táu-Tái invited to partake. According to the Chinese custom, only confectionery, preserves, and fruit were handed round. The liquids consisted of sherry, liqueurs, Chinese wine or Samschoo (made from rice and imbibed from cups in lieu of glasses), and green

and almond tea. The Mandarin drank to all present, and seemed to take more to sherry and Maraschino than to his own native drinks. The slim liqueur bottle, with its neat gilt label and the thick cork stopper, seemed especially to attract his attention.

After a few commonplace observations, the Táu-Tái once more turned the conversation upon Austria, and remarked he had never before heard of that power. Mr. Meadows endeavoured to prompt the memory of the Chinese official, produced Muirhead's universal geography translated into Chinese, turned up therein the section relating to Austria, and handed the book to the Táu-Tái, who had the entire passage read to him by one of his attendants, that he might "get up" the country from which the strangers had come who were seated on his left and right hands.

The inquisitiveness of every Chinese now displayed itself in a series of inquiries as to the principal products and articles of export of the Empire, and he expressed a hope he should ere long see more of the "Austrian Mandarins" in Shanghai. The *Novara* travellers on their side with a patriotic pride, readily pardonable under the circumstances, endeavoured through the medium of the Government interpreter to leave the best possible impression of their native country upon the mind of the Táu-Tái, by giving a glowing description of the Austrian Empire, its natural advantages, and its people. Of numbers the worthy man seemed to have no definite idea, for the remark that the Empire contained (1st August, 1858)

very nearly 40,000,000 inhabitants seemed greatly to astonish him, although this is probably barely one-tenth of the population of the Chinese Empire.*

Just as the Táu-Tái was preparing to set out on his return, a tremendous tumult was suddenly heard in the street. It seemed like a popular insurrection, and servants were forthwith sent out to ascertain the cause of this unexpected shindy, who came back presently with the intelligence that an English sailor had struck a coolie of the suite a blow on the face with his fist, so violent that he was seriously injured, and was bleeding profusely. The Táu-Tái made his ap-

* As another example of an interview with the highest class of Chinese officials, we must briefly describe one enjoyed by some of our Expedition with a Mandarin named Li-hoi-wan. He received them in a chamber of his house, in which were a few small tables and chairs, while at the other end was an elevated cushioned seat on which sate Li-hoi-wan, a large stout man. He wore a Mandarin hat, with a blue button, and a greyish blue coat reaching to the ground. He saluted the foreigners by folding his palms across his breast, invited them to be seated on the daïs beside him, and ordered cigars and tea to be brought. Afterwards sweetmeats of every description, confectionery, and fruit were served, as also Chinese wines, the latter, to judge by their flavour and their fragrance, seeming as though they must have hailed from a perfumery store rather than a wine cellar. Two days after the Chinese, with delicate courtesy, returned the visit at their quarters in the residence of M. Probst, the Consul for Oldenburg. Punctually at the appointed hour three far-resounding taps of the gong were heard, a foot-soldier of police presented a flaming red "*carte de visite*," bearing the name and titles of Li-hoi-wan, who forthwith was received by the travellers at the threshold, in compliance with Chinese customs. He was attired in heavy silk clothes, his fan in an elegantly worked sheath, a gold lever watch in his girdle, and was in excellent spirits. The hospitable host had, according to the custom of the country, prepared a chow-chow, or collation, at which, however, instead of Samschoo, champagne was the prevailing beverage. A few days later the Mandarin visited his newly acquired friends on board the frigate, and begged their acceptance of a variety of presents, such as silks, nuts, tea, dried fruits, and Chinese maxims and proverbs, written on long rolls of paper, that, as he naïvely expressed it, we might think of him "as a brother."

pearance on the portico. As soon as the injured man saw his master approaching, he flung himself before him imploring aid, and exhibiting his face streaming with blood, and the wound gaping open. The Táu-Tái ordered the man to rise, and delivered him to the Chinese police. Occasionally when a Chinese receives a wound in a quarrel of this nature he will abstain from wiping off the blood-stains from his face for weeks together, finding, it should seem, some satisfaction in being able to exhibit them. This done, the procession resumed its march. In front strode a man who from time to time administered a sounding thwack to the gong, after which he rushed through the streets bawling like a Stentor, that the people might crowd on one side and leave the Táu-Tái space to pass unobstructed. The rear was brought up with police, catch-poles with long bamboo poles, and the executioner with his axe—the never-failing attendant on such occasions,—who accompanies it, however, only as a sort of allegorical personage, to impress upon the yelling crowds around the consequences of disobedience, and of rebellion against constituted authority.

The only important excursion we made from Shanghai was to the Jesuit Mission of Sikkawéi, twelve miles distant. Our excellent host, Mr. James Hogg, of the well-known firm of Lindsay and Co.,* and Consul for the Hanse towns, to whose great kindness we are deeply indebted, was so kind as

* Mr. Hogg has since left that firm, and with his brother, Mr. Edward J. Hogg, has established the firm of Hogg Brothers, in Shanghai.

to order his pretty little yacht *Flirt* to be got ready for our accommodation, and we set off, accompanied by the heroic Mr. Gray, of the American house of Russell and Co., who lost one foot while fighting against the Tai-ping rebels before the very gates of Shanghai. As the Europeans are in the habit of using these pleasure-boats as residences during their visit to the interior, so as not to be dependent upon the somewhat uncertain hospitality of the Chinese, they are provided with every accessory to comfort, being fitted with a neat cabin, a small library, boudoir, berth-cabin, &c. They usually carry an immense spread of canvas, and during calms are propelled like the native boats with one big oar from the stern, which serves at the same time as a rudder. The sail up the Wusung, in which upwards of a hundred sail of merchantmen, and above a thousand junks, were lying at anchor, was very interesting. Many of the junks lying off the Catholic cathedral of Tonka-dú displayed a flag with a white cross on a black ground, in token of the religious faith of the crew. Here also we saw for the first time some Siamese ships, built in Siam, for the most part on European models. Of these we counted eleven. By way of ensign, they had an elephant rather nicely drawn, sometimes on a red, sometimes on a blue field, according to the fancy or the taste of the owner. These vessels have Siamese crews and English captains, and are armed with ten or twelve cannon, so that his Siamese Majesty can at a moment's notice use his little fleet of merchantmen for warlike purposes.

The channel, 200 or 300 fathoms wide, which unites the Wusung with the internal network of small rivers, is called the Wuang-Po, a designation which some authorities assume to be the name of its constructor, while others maintain that it is derived from *wong*, yellow, and applies to the colour of the water, just as Wham-poa, near Canton, signifies the yellow anchorage. Nothing has so much contributed to that immense activity of commerce, which we marvel at among the Chinese, as their vast canal system, the introduction of which was pursued with such energy in the 7th century.* The innumerable artificial canals, with which the whole north of China is intersected, and which by their admirably planned system of arrangement unite all the lakes and navigable rivers of the Empire with each other, make it possible to voyage through every province of the Empire without having once to leave the boat. They atone for the great want of good roads, and even make the absence of rail-roads less perceptible in a country where the value of labour is so unprecedentedly low.

As soon as we leave Shanghai behind, with its immense

* Under the Emperor Yang-ti of the Tsin dynasty, which filled the throne during the 6th century, more than 1600 miles of canals were partly constructed, partly rebuilt and repaired, the immense works being distributed among the soldiery and the inhabitants of the cities and villages. Each family was bound to furnish one man, between the ages of 15 and 20, whom the Government only found in provisions. The soldiers, on whom devolved the heaviest portion of the work, received higher pay. Some of these canals, which were the making of the commerce of the interior, and thus were of the utmost service to the welfare of the Empire, were forty feet wide, and were planted on either bank with elms and willows.

commercial fleet, the scenery beyond becomes tame. The banks on either side are low, and far as the eye can reach not a single hill is to be seen, not even a rising slope—nothing but a flat alluvial soil, every inch of which seems diligently tilled, or otherwise made useful.

After we had sailed several miles in the *Flirt* we came to a branch of the great canal, where we shifted into a smaller but not less elegant boat, the property of Mr. Gray, which drew less water, and in which we were to reach the Jesuit mission. At this season, however, owing to the lowness of the water, navigation was only continued with great difficulty, and notwithstanding the astonishing dexterity with which our worthy Lau-tú (the old chief) conned our craft through the sharp bends of the river, we were at last compelled to halt, and perform the rest of the distance, about two miles, on foot.

We now found ourselves strolling through fields planted with rice and cotton, through cabbage and vegetable gardens, occasionally even over graves, which rose in mounds here and there along our path. Sometimes in the distance we could descry small villages and solitary farm-houses.

In Sikkáwéi we found about twenty Jesuits, French and Italians, all of genuine Chinese appearance, with heads half-shaved, long queues stretching to the ground, loose yellow clothes, and velvet shoes with thick cork soles. This had a striking, almost theatrical effect. We were ushered into the reception-room, and there offered refreshment. The conversation

soon became brisk, which added to the singularity of the scene, as the seeming Chinese, sitting in a circle round the table, and smoking perfumed tobacco out of small long-stemmed pipes, began, in fluent French or liquid Italian, to discuss Paris, Naples, Vienna, or politics and art.

This Mission is supported by the Propaganda of Rome, as also by voluntary contributions. About 80 pupils, chiefly children of poor parents, are instructed in the Chinese language and literature, in reading, writing, arithmetic, and drawing, and in the tenets of the Roman Catholic faith; on the other hand, little anxiety is manifested for their instruction in French or English, or in providing them with any practical mechanical instruction. In this mode of education the main object seems to be to enable the students more readily to reach the highest offices in the state by imparting to them a thorough grounding in Chinese literature, and by these means to ensure for them religious influence and protection. Accordingly, strenuous efforts are made to increase the number of scholars, and in order to facilitate this aim, as in the case of the Indians of Central and Southern America, their observance of various heathen rites is connived at, as, for example, the worship of their ancestors, the ceremonies at the death of a relation, &c. &c.

One branch of art, in which some of the scholars have, owing to their having naturally a turn for it, attained considerable proficiency, is wood-engraving. In the church attached to the Mission are shown a number of altar-ornaments,

chiefly figures very beautifully carved in wood, the work of a Jesuit of Spanish extraction, whose talent and enthusiasm seem to have laid the foundation of this school of image-carvers. In what is called the model-room are numbers of figures and busts designed by the practised hand of the brother alluded to. Here too are some heads of the Saviour, very beautifully executed in clay by the Chinese scholars, as also Madonnas, busts of Queen Victoria, Prince Albert, and the Emperor Napoleon III. These are doubly extraordinary, when we remember the slight instruction and very scanty assistance bestowed on them while in course of execution; their actual value however is small, for at present, as none of the Jesuits in the Mission have any very decided taste for the art, instruction in it has almost entirely ceased.

The achievements of the present members of the Society of Jesus, in China, suffer greatly, measured by the standard of what was accomplished by their renowned brethren in previous centuries; one looks in vain for the high attainments, the self-sacrificing zeal, the practical talents of other times, and Sikkawéi, with its present spiritual occupants, cannot leave a very pleasing impression on any unprejudiced Catholic. There is an utter lack of all those qualities which once formed the renown and the title to admiration of the Jesuits in China. One looks for, but fails to find, a library corresponding to the dignity of the Mission, or mathematical or medical instruments, or a chemical laboratory: in lieu of these there seem to prevail a deficiency of Christian toleration for these unmis-

takeable adjuncts of true education and enlightenment. At all events, we judged as much from a remark made by the brother who accompanied us round the building, who spoke some words in Chinese to the gaping crowd of long-tailed scholars, who kept pressing upon us, and then turning to us, observed in French,—"I have informed our pupils that our present guests are Roman Catholics, and therefore *true* Christians, because we occasionally have English visitors at the Mission, and they are heretics." Apparently the intolerant padre was reckoning without his host, for there were several Protestants among the party!

Throughout the province of Kaing-su there are at present 80,000 Chinese Catholics, that is to say, who profess Catholicism, though having but a very superficial idea of its spirit and its reality.

In returning to our boat we availed ourselves of the mode of conveyance in most common use in China, the sedan-chair, or couch. The ordinary sedan-chair differs little in exterior form and interior arrangement from those still occasionally used in some of the out-of-the-way, old-fashioned towns, both of Germany and England. Owing to the extreme cheapness of labour, the least well-to-do classes of Chinese are able to avail themselves of these convenient conveyances, the use of which is doubly agreeable in such a hot climate. Indeed, long journeys are very frequently made by this mode of transport. As a rule, the sedan-bearers get over from twenty to twenty-five miles per diem, charging for that distance one dollar, in

addition to their food, consisting of tea, rice, vegetables, and cakes. Baggage and merchandise of all sorts are conveyed by coolies, each carrying with ease 110 *catties*, equal to 146 lbs. With such a burthen he will trudge over lofty mountain passes, and without much effort will cover thirteen miles a day. If special dispatch is required, the burthen must be reduced one-half, when the coolie, keeping at the trot, will get over double the distance in one day; what is gained in speed being lost in power.

On our return to Shanghai, we visited the celebrated six-storied Pagoda, Long-sáh, which is traditionally said to have been erected about A.D. 250, during the period of the Three Empires. Of all the Pagodas hitherto known, not even excepting the well-known specimen at Canton, it is the best preserved, and forms one massive, wide quadrangular tower, about 150 feet high, arranged in six stories, one of which has running around it a richly carved balcony. The pyramidal roof has turned-up angles, to which are suspended bells, which when agitated by the wind give forth their music. From the highest story, to which access is obtained by a stone staircase, there is a rather agreeable, pretty extensive view over the country, and its cultivated surface, stretching away till, at 200 miles from Shanghai, to the north and north-west, rises a range of mountains, of which of course not a glimpse is to be seen hence, the prospect in this direction having no defined limit. This panoramic view gives an excellent idea of the characteristics of a Chinese landscape, the various methods of

cultivation, the situation of the valleys, and, above all, the ceaseless tide of traffic, as evidenced by the almost innumerable artificial water-channels which intersect the country in every direction. Quite close to the Pagoda is a Buddha temple, the well-known Lûng-hwó, erected A. D. 230. Of the seventy Buddhist and Taouist temples of the province this is the largest and most beautiful. The rear of the edifice is adorned with countless figures, sometimes of colossal dimensions, in wood, plaster, and porcelain, richly carved and gilt. There is also a female statue among these Chinese saints, the attitude strongly suggestive of a Madonna.

This temple is plainly in connection with the Pagoda, and the various small chambers behind it seem to have been destined for the accommodation of priests and devout pilgrims. According to an old Chinese tradition this temple owes its erection to the following circumstance:—a queen from the south, who had anchored her boat one night in the Whampoa Channel near Wusung, suddenly beheld a light shoot up amid the tall grass, and rise towards heaven, in consequence of which she gave orders for a temple to be built on the site.

One of the most interesting episodes of our stay at Shanghai consisted in a genuine Chinese banquet, given by a wealthy native merchant, named Ta-ki, a warm friend of all foreigners, in honour of the Austrian Expedition. The huge invitation cards, written, according to the usual practice of the country, in Chinese characters upon blood-red paper, and folded in envelopes of the same brilliant hue, were sent

round to the residences of the guests some days beforehand.

At 8 P.M. the feast began. Ta-ki's house, like those of all the wealthy Chinese, is surrounded by a massive wall, six or seven feet in height, and painted white. After passing through a narrow gateway, the visitor finds himself at once in the usual apartments. These were adorned for the occasion with large coloured lanterns, which despite their numbers shed a mild and most agreeable light.* Along the walls, which were richly gilt, hung quantities of sententious native maxims, written with Indian ink, sometimes in Chinese characters, sometimes in Tartar, on white or yellow rolls of paper. The greatest attention appeared to have been paid to the preparation of the reception-room, whose form was a rather narrow oblong, in which at the far end was erected a platform, where a strolling company acted Chinese theatricals. The musicians sat on the stage. The company belonged to one of those innumerable wandering troops which are engaged for a day or two now by the community, now by wealthy Mandarins, to give some theatrical representations, which it

* These lanterns, often beautifully carved and otherwise adorned, are among the most characteristic furniture of a Chinese room. Into their manufacture enter not alone glass, horn, silk, paper, &c., but also the glutinous matter derived from a species of sea-tangle (*Gigartina tenax*—called by the Malays *Agar-Agar*), with which the paper employed in covering the sides of the lantern is fastened on. In the silk and paper manufactures too this omnipresent Agar-Agar paste plays so important a part, that above 500 piculs at $2 a picul, are annually imported from the Indian Archipelago.

seems must in China form the accompaniment of every important event, whether joyous or sorrowful.

At those performances which are given in public, the multitude is admitted gratis, and of this privilege they avail themselves to the utmost. Each man selects the best seat for himself, on the street, in a tree, or on a roof. Mandarins, however, and rich private individuals have their own little stage scenes in the interior of their usually spacious mansions, in which from time to time they have theatrical representations for the amusement of a small circle of friends. Some Mandarins even go the length of having their own players, who receive regular annual pay, and form part of the household.

Notwithstanding the very extensive collections of Chinese plays, with several of which the learned classes of Europe have been made acquainted by the valuable labours of Julien, Bazin, Remusat, and others, there are but a very few of true literary value. The plot of most of them is exceedingly simple, the actors themselves specify the characters they are to play; between each scene there is usually a lack of connection, and frequently the most telling scenes and situations are marred by the most arrant trash, or the coarsest jests. Only a very small number of these rise above the level of the buffoonery of former ages, and judging by the accounts given by travellers, who have been present at such entertainments in even the large cities, including Pekin itself, the dramatic art would as yet seem to be in

its infancy in China.* The company which was assembled in the hospitable mansion of Ta-ki, to do honour to the members of the *Novara* Expedition, was not calculated to impress them favourably with the scope of the Chinese drama. The piece appointed consisted of events in the ancient history of China, for which Chinese dramatic poets have a special predilection, owing to the abundance of material from which to choose, although the multitude seem to have but little sympathy with it. Even our host, who spoke the Canton-English, as it is called, could give us but little explanation or enlightenment as to the plot, and contented himself with repeatedly remarking that the piece related to "old, old times!"

Notwithstanding the universal custom, according to which women are not permitted to enter a theatre, so that even the female characters have to be played by men dressed to represent the part, the majority of the present troupe were girls of from 14 to 20 years of age, who, stained red or white, and elegantly arrayed, appeared mostly in Mandarin dresses on the stage. The most outrageously absurd of the scenes were those most in favour with the numerous domestics who, besides the invited guests, formed the audience. Thus, there was a roar of laughter when a nurse entered with a child in her arms, which had the face of an old soldier, with grey beard, whiskers, and moustachios. They sang a long, rather

* Vide Huc's Chinese Empire, Vol. I.

melancholious ditty, and then retired, without there appearing to be the slightest connection between this and the following scene. We noted the evident predilection of the Chinese actors for a high-pitched falsetto tone of voice when speaking, which, by the way, must render their assumption of female parts much more easy, and on the present occasion they probably were desirous of giving us a specimen of their skill in this accomplishment. The music on such occasions is, if possible, even more discordant and monotonous than the delivery, and is not confined to merely accompanying the couplets, but continues to play during the intervals till the ear is utterly wearied.

At the close of each act a large board covered with a red cloth was brought on the stage and placed beneath the feet of the actors; on this the steward of the house placed a present for the troupe about four dollars' worth of copper *cash*, which was forthwith carried away. This was apparently the only intimation to most of the spectators that a piece was ended, and a fresh one about to begin.

After these theatrical representations had lasted about an hour and a half a long pause ensued. One longed to escape outside into the fresh air, to get rid of the wearying sensation of the performances, and the stifling heat which prevailed in the room. The guests were at liberty to walk without obstruction through the various apartments of the extensive residence, and accordingly stumbled upon rooms which are usually, as it were, hermetically sealed to a foreigner, viz.

the apartments of the women. Ta-ki carried his hospitality even this length, and presented us to his wives, as also to his grey-haired mother, seventy years old, for whom he showed the utmost love and respect. Ta-ki's wives, four or five in number, had "assisted" at the theatrical performances, each seated on elevated seats expressly prepared for them, and behaved with the greatest courtesy and ease of manner. They seemed not to have the slightest thought of showing off, or of tittering or joking with the strangers. All were attired in silk, and most tastefully decorated with jewels; all had the usual painfully distorted small feet, which greatly interfered with their powers of locomotion. They did not attend at the banquet, but had their food served in the private apartments.

For supper the quondam theatre was converted into a banqueting-hall. But there was no long wide table set out as in Europe, only small four-cornered tables covered with red cloth, at each of which three Europeans and one Chinese took their seats; the duty of the latter being to do the honours to his companions in the name of the host, who took his seat beside the Commodore, and to minister to their comfort.

As it was the object to give us the most accurate idea possible of a genuine Chinese repast, everything was eliminated which could in any way interfere with the design, and we had accordingly to begin with dessert and conclude with the soup, as also to convey the various descriptions of food to our

mouths with thin strips of ivory ("chop-sticks"), instead of knives and forks.

The peculiarity of Chinese usages, so directly opposed to those of Europe, became likewise strikingly apparent in the course of the meal. And as in China the mark of courtesy is to keep the head covered instead of removing the hat, so the place of honour is on the left hand; the ancestors are ennobled instead of the descendants (which is at once more sensible and more economical); the characters in writing run from right to left instead of the reverse; the mourning colour is white instead of black; the natives carefully extirpate every sign of a beard, instead of cherishing it as a symbol of mature, dignified manhood; thus also meals begin with the food with which we terminate ours, confectionery and fruit. When we were all seated, each table was forthwith covered with a profusion of the most varied dishes on beautiful plates of stained porcelain, and while we were still engaged in attempting to discover the mysterious ingredients of these, the Chinese who was doing the honours at our table was exerting himself to select and lay before us the most dainty morsels of each dish. In performing this part of his functions he thought only to act with more care and attention, in drawing each of the twain chop-sticks between his own lips and withdrawing them before he fished up a fresh piece and laid it on our plate! The dexterity with which all Chinese use these chop-sticks, which are usually made of

ivory, ebony, or bamboo, borders on the marvellous. In their hands, held between their fingers, they become like a pair of pincers, with which they can pick up the smallest objects, and can eat rice-grains, beans, or peas as easily as they can separate the flakes of a fish from its skin, or remove the shell of a hard-boiled egg.

As to the ingredients of the dishes presented, we must frankly avow that by far the greater number were utterly unknown to us, for the Chinese cuisine, oddly enough, sets great store on making the materials unrecognizable, and altering their natural flavour by various recipes and culinary mysteries. According to the inquiries which we made of our carver, our host seemed so anxious to fulfil to the letter his promise to give us a real Chinese repast, that he had resolved on not sparing us a single one of the rarer dainties of Chinese epicures. Thus we not only had swallows' nests, lapwings' eggs, and steamed frogs, but also roasted silkworms, shark-fins, stag and buffalo tendons, biche-de-mar, bamboo roots, sea-weed, half-fledged chickens, and various other natural delicacies. The table was supplied at least three times with fresh delicacies, and we believe we do not exaggerate when we estimate the number of different dishes at not less than half a hundred. Meat of all sorts was at a discount, and was served up in small morsels ready carved;* on the other hand, rice and veget-

* The Chinese find it not less inexplicable that we use such murderous-looking instruments to divide and convey our food to our mouths, with which they think we must every moment be in danger of wounding our lips or putting our eyes out,

ables were presented in every imaginable form. During the meal one young girl, who had played a part in the dramas, was incessantly occupied with filling for each guest a very small cup with a warm beverage distilled from millet, thus carrying out the code of Chinese civility, that the cup should never be suffered to be empty, and therefore, that however little has once been drunk it must forthwith be replenished. Of the juice of the grape the Chinese make no use, although there are many districts in the country which are eminently adapted to the growth of the vine. All the native drinks consist of nothing but poor-flavoured, highly-perfumed drinks, chiefly distilled from millet and rice, and known by the general name of Samshoo, although this name is solely applicable to that obtained from rice, which somewhat resembles arrack. After the meal is over there are no spirits presented, but only tea, usually the common green tea, or else a tea prepared from almonds. The Chinese are, on the whole, a very temperate people, and even their passion for smoking opium is rather a vice among the masses of the coast provinces and the large towns, than of the interior of the kingdom. During the banquet, as well as after it, there were further theatrical exhibitions, but the guests, who had been sufficiently wearied with the first of these, preferred to retire quietly to

than that we should remove the bones from the flesh, or crack the shells of nuts and almonds, both which operations seem to them excessively absurd. In fact, it is no mere bon-mot which represents a Chinese gazing in astonishment at Europeans playing billiards, or nine-pins, waltzing, or "polking," and remarking, with an ill-concealed assumption of superiority, that wealthy people ought to leave such fatiguing things to be done by their servants!!

their own residences, and, seated in a rocking-chair on the delicious verandah, to recall all the peculiarities of the entertainment at which they had been present.

The rites of hospitality to strangers were not, however, limited in fulfilment to Ta-ki, since the various consuls settled at Shanghai, as well as several of the English, American, and German merchants, invited the members of the Expedition to dinner-parties given in their honour, each vying with the rest in refined courtesy. An especially pleasant memory attaches to one indication of this feeling, the spontaneous offering of a number of Germans to our commander and his associates. We were sitting in the house of Mr. James Hogg, the Hanseatic Consul, when from the garden there suddenly arose a serenade of men's voices, singing German melodies. Surprised and deeply affected, the entire company rose from table and strolled into the garden, but the serenaders were concealed behind a group of trees, and as they withdrew, singing, the last cadence of a thrilling patriotic song was heard melting in the distance!

The Germans already constitute a by no means inconsiderable portion of the foreign community of China, and it is painful to observe what slender encouragement and support their energy and industry have as yet met with from the various governments of Germany. The number of Bremen ships which visited the harbour of Shanghai has of late years equalled that of the United States, and would be very greatly increased if the German mercantile community and the

home-shippers to the Chinese market could depend upon protection such as the English and French can rely upon. The German States, such, for instance, as the Hanseatic Towns, Prussia, Oldenburg, have indeed unsalaried Consuls here, but the shrewd, material Chinese people require something more than an empty intercession—they require to be convinced by an unmistakeable physical ability to back these representatives. Many a crying injustice, which the helpless German merchants and ship-captains have to put up with without hope of redress in the various ports of China, would not and dare not occur if but a single German ship-of-war were stationed in Chinese waters. What the effect is, under similar circumstances, of even one single small boat was well illustrated by Mr. Alcock, formerly the English Consul at Shanghai,* who with a small English brig blocked the mouth of the Yang-tse-kiang, and did not suffer one single "junk" of the many hundreds stationed in the river to put to sea under threat of firing into them until the Chinese Government had paid attention to his demands, and surrendered for trial by an English tribunal the murderers of an English missionary. The bare menace of closing the river sufficed to secure the Consul in his rights, and he speedily saw his various demands complied with. Only a month or two later a Bremen captain sustained such severe losses through the wilful act of the Chinese Government that he had to sell his ship, the energetic protest of his Consul to the native authorities meeting no

* Since the well-known minister and envoy to Japan.

other attention than an insulting chuckle over the powerlessness of the German empire.

In consequence of the Treaty of Pekin securing to Europeans the unobstructed navigation of all canals and rivers throughout the Celestial Empire, the trade with China is becoming so rapidly developed, that some remedy of this sort is imperatively needed,—if German commerce and industry would avoid receiving a serious check, if she would not be supplanted by other and more fortunate nations, in the endeavour to avail herself of the great alteration for the better in the facilities for trade in China.

The activity and energy of the English in opening up new outlets for their native manufactures were here astonishingly visible. Hardly are the ratifications of peace exchanged, opening the most important rivers and harbours of the Empire to free commerce with the subjects of England, ere the country has been surveyed and explored in every direction. A number of English merchants ascended the Yang-tse-kiang as far as Hang-kow*(mouth of trade), a city containing several millions of inhabitants, which, in consequence of its extraordinarily advantageous site, has already been described by Huc as the chief emporium of the 18 Provinces, and whence all the foreign trade radiates into the interior. Others undertook a land journey from Canton to Hang-kow; a third company ascended the Pei-ho and visited Tien-Tsin, while yet a fourth were contemplating the formidable undertaking of

* Since sacked by the Tai-ping rebels.

boating it up the Yang-tse-kiang from Shanghai to Hang-kow, whence they thought of penetrating viâ Thibet into British India.* Already information has been obtained from a variety of these excursions, which were undertaken specially in the interests of commerce, such as justify the most glowing expectations as to the trade with the Yang-tse-kiang and the Pei-ho.† Hang-kow promises to be a most important depôt for the exportation of tea, while Tien-Tsin promises to be not less important as an entrepôt for the importation of manufactures of every description. By the opening of these two additional harbours, Shanghai and Canton will fall off in their ratio of increase hitherto, but general commerce will on the whole receive a new impulse.

To the merchant and shipper, the latest intelligence from China as to the enormous development of commerce and trade at numerous spots of the Central Empire, hitherto undisturbed by European civilization, must be positively astounding. It is a rich mine of the most valuable material, which the *China Overland Trade Report* and the *North China Herald* presents to its readers, rendered doubly valuable through

* Abandoned after a large part of the course of the Yang-tse had been explored. Lieutenant-Colonel Sarel published lately a most interesting and valuable pamphlet on this expedition, of which he was the leader, under the title, "Notes on the River Yang-tse-kiang from Hankow to Ping-Shan. Hong-kong, Printed at Noronka's office."

† Report of the deputation, appointed by the British Chamber of Commerce in Shanghai, on the commercial capabilities of ports and places on the Yang-tse-kiang visited by the expedition under Vice-Admiral Sir James Hope, K.C.B., in February and March, 1861. Supplement to the China Overland Trade Report of 28th Feb. and 27th May, 1861, and Supplement to the Overland China Mail, No. 237 of 12th June, 1861.

the influence of that Freedom of Speech, which makes every mercantile nation participate in the very latest information as to these experiments and their results. For, so far as concerns our present direct intercourse with China, a time must come, when more accurate notions will penetrate into even Austrian commercial circles as to the wants of a population, and the natural wealth of an empire, which embraces a superficial area of 3,000,000 square miles, with a population of 400,000,000 souls, and whose entire foreign commerce already amounts to £36,000,000, apart from the impulse which recent events must lend it.

Notwithstanding the immense variety of natural products of the Chinese Empire, the chief articles of export hitherto have been tea and silk, and we shall therefore confine our attention to a few important particulars as to those two articles.

The introduction of silk cultivation into China, one of the most ancient industrial pursuits of the Empire, is due, if we are to believe a native legend, to the consort of the Emperor Hwang-te, who reigned B. C. 2640. The first mention of the mulberry tree and of silk occurs in the Schoo-kiu,* "the

* According to Dr. W. H. Medhurst's translation of this rare work, for a copy of which, rescued from the last great conflagration at Canton, we are indebted to the kindness of Mr. Wylie, the portion especially referring to this runs as follows: "The mulberry ground having been supplied with silk-worms, the people descended from the hills and dwelt in the plains," (p. 91,) and further on, "their tribute baskets were filled with black silks and checkered sarsenets" (p. 96). See Ancient China, 書 尚 平 The Shookin, or the Historical Classic. Being the most ancient authentic Records of the Annals of the Chinese Empire. Illustrated by later commentators. Translated by Dr. W. H. Medhurst, Sen. Shanghai, 1846.

Book of exalted solid learning—the Book of Books," as it were, a collection of the most ancient historical annals of the Chinese Empire, which was compiled B. C. 484, by Confucius, from the memoranda of former writers of history, as well as from the information furnished by ancient monuments. Even empresses in those halcyon times did not deem it beneath their dignity to collect mulberry-leaves and feed the silk-worms, while various treatises were composed by imperial pens, respecting the cultivation of that most useful plant. The interest taken in silk-rearing by these the highest personages in the Empire, has remained unbroken to our own day, and quite recently a Chinese governor enriched the already copious literature upon this subject with a comprehensive work, written with the laudable object of stimulating the inhabitants of the silk-producing districts to a more extensive and improved system of silk cultivating.

The two best species of mulberry, those which are best adapted for the consumption of the worm, are: "Loo" (*Morus alba*), with long leaves, little fruit, and firm roots, which flourishes chiefly in North China, and "King" (*Morus nigra*), with narrow leaves, more abundant fruit, and altogether a hardier plant, which grows chiefly in the South.

According to old Chinese notions, there are eight different species of silk-worm, which spin their cocoons at various periods * of the year between April and November.

* Thus Yuen-tschin in the third month (April of our calendar), Chay and Yuen in the fourth month (May), Gae-tschin in the fifth month (June), Sai in the sixth month

The chief silk districts lie in the northern part of the province of Tsche-Kiang, and the principal silk marts are the following cities: Hoo-chow-foo, Hang-chow-foo, Keahing-fu, Nantsin, and Shoo-hing, which lie in a sort of semi-circle about 150 miles from Shanghai.

The silk is not grown in China by wealthy landed proprietors, and "thrown" in huge establishments, but by millions of husbandmen, each of whom calls but a small patch of land his own, and plants it with mulberry trees, thus, like the bee, contributing his own share towards increasing the universal stock. During the season specially devoted to the silk-worm, old and young, lofty and lowly, throughout the silk districts, are busily and earnestly engaged night and day in tending the worms and winding off the silk. When the crop is being gathered in, the chief merchants send their agents to all parts of the chief silk districts, in order to collect and buy up these small quantities (varying greatly in value, as may be readily imagined), and depositing them in regularly assigned warehouses, where they can be sorted according to quality. This done, the silk is packed in bales of 80 *catties*, or about 106 lbs. weight, and conveyed to Shanghai for sale, where it is once more subjected in each mercantile house to the examination of the special "silk Inspectors," or "Testers," after passing through whose hands, it is sorted according to quality for shipment to Europe.

(July), Han-tschin in the seventh month (August), Szé-tschan in the ninth month (October), and Haù in the tenth month (November).

Three distinct qualities of raw silk are known in commerce, viz. Tsatli 匕里, Taysam 大蠶 (the big worm), and Yuen-whá, or Yuen-fa 固若 (the flower of the garden). These three leading descriptions are again subdivided into a great number of sorts, which are usually known by the name of the trader, or his "hong" (business).

The annual production of silk in China is estimated to amount to from 200,000 to 250,000 bales, or from 20,000,000 to 25,000,000 pounds' weight. This, however, is a very superficial estimate; that silk cultivation, however, must be enormously developed in China is obvious, not alone from the immense home consumption of the article, but also from the circumstance that, notwithstanding the immense increase in exports during the last ten years, the price of silk has not merely remained stationary, but is on an average absolutely less than at a period when barely one-fourth of the quantity now exported found its way to England and France. The price of silk is usually reckoned in Taels,* on the estimate of a bale averaging 100 lbs. English. Between Shanghai and London the bale loses on the average three per cent. in weight. There is also usually an allowance made of 15 per cent. for cost of transport and incidental charges from Shanghai to any English port.

On the average only one-fourth of the entire quantity of

* The value of a tael, as already stated, varies from 6*s.* to 6*s.* 6*d.* It is estimated that a bale of silk, until it is shipped at Shanghai for England, has cost from £80 to £100 sterling.

silk produced in China, or about 6,000,000 lbs., is exported annually, of which by far the largest quantity, perhaps as much as nine-tenths, goes to England and France. In 1843-44, the total export from all China was only 5100 bales. In 1859, the export of raw silk from Shanghai alone was 75,652 bales!

Besides the raw silk there are annually exported from China a large quantity of silk-stuffs manufactured in China, crape shawls, &c. &c., to the value of from £400,000 to £500,000, the majority of which find a market in the United States.

The social condition of the Chinese silk-spinner is not less deplorable and poverty-stricken than that of the workmen of Europe, who are similarly engaged in the preparation of this costly article of luxury. As in Lyons, in Spitalfields, or among the Silesian Mountains, the Chinese silk-weaver lives and dies in the most abject misery, and the delicate and beautiful fabrics of his loom are produced in a wretched hut of such mean dimensions, that he is sometimes compelled to dig a hole in the soil in order to find room for the treadle. However, the Chinese weaver appears in so far better off than the same handicraftsman in Europe, that he has less to dread from the severity of the climate, and can purchase more food, even though his remuneration be smaller, than the weaver can possibly do in Europe, owing to the much higher price of even the commonest necessities of life.

The recent revolution in Chinese foreign relations will ex-

ercise a permanent influence on the silk culture of China, and, considering the exceedingly low rate of wages in that country, the time cannot be far distant, when one may purchase Chinese silk in Europe more cheaply than home-grown silk, when manufacturers will find it more profitable to purchase this most important raw material in China, than in Italy or the South of France. Acute business-men in Hong-kong and Shanghai assured us that it only needed an impulse from without to increase the silk manufacture of China tenfold, and supply the annual demand for silk of the entire globe, which, if we are to believe encyclopedias and such like authorities, amounts to from 12,000,000 to 15,000,000 lbs. What makes Chinese silk especially suitable for the European market is its possessing in great perfection the two chief qualities of substance and colour, while, on the other hand, it is inferior to that of Europe in the fineness and glossy feel of its fibre. In Europe the silk is wound off from a limited number of cocoons, whereas in China it is left to the discretion of the workman to spin it from few or many cocoons as he pleases. Hence results that inequality and unevenness in the texture of the thread, a defect which cannot possibly be remedied by after-manipulation, and which accordingly completely prevents its employment in the manufacture of the more costly fabrics. This drawback, which is the main reason why Chinese silk does not rule the European market, will however admit of being remedied without any difficulty, so soon as the silk districts become more easily accessible, by the

introduction of European labour and machinery, when this valuable and costly product will gain materially both in fineness and suitability.

Only a few years since German and Austrian merchants attached but a small value to Chinese silk as suited to our market, and it seemed to them a positive absurdity, when any one spoke, as we ourselves repeatedly have done from a profound conviction of its truth, of the future influence exercised over the silk markets of the world by the influence of this Chinese raw material. Now-a-days we hear that there is scarcely one single silk factory which can hold its ground, unless, in addition to French and Italian silk, it imports Chinese silk, while the demand for that material increases from year to year, and has very probably not yet attained the one-hundredth part of the development of which it is susceptible.

Tea (*Chá**) ranks next to silk among the articles which have raised the trade with China to such an importance. The cultivation of the tea plant is of far later date than that of the mulberry tree, and its leaves, although used by the Chinese as a curative from the third century of our era, only came into general use, as providing a universal drink, towards the end of the sixth century.† Statesmen and poets sounded

* The word *Châ* is, however, used by the Chinese to designate not the tea plant alone, but every description of *Camelia*.

† Arabian travellers who visited China in the 9th century, A.D. 850, speak thus early of tea, as of a beverage in universal use. According to Kämpfer tea was introduced from China into Japan about A.D. 519, by a native prince named Dæme, who,

the praises of the new beverage, and while the one employed this excellent and beneficial gift of nature to fill the treasury by the imposition of a tax, the others chanted the praise of the plant in their hymns and songs, and thus, probably without intending it, contributed to increase the revenue of the Government.

"Tea," writes one of the older Chinese authors, "soothes the spirit, softens the heart, dispels languor, restores from fatigue, stimulates the intellect, and arouses from indolence; it makes the body lighter and more brisk, and quickens the faculty of observation."

The tea plant first attracted the attention of Chinese naturalists in Wu-yi, or, as the English term it, the Bohea* district, which enjoys to this day a great reputation for the exquisite quality which grows on its hills.

At present the cultivation of the tea plant extends northward as far as Tang-tschao, in the province of Shantung, southward as far as Canton and Kuang-si, and westward as far as the province of Yun-nan. As, moreover, the tea plant likewise abounds in Japan, the Corea, and the Loo-Choo Islands, as also in Chusan, Tonquin, and Cochin China, we may assume that it flourishes over about 28° of latitude and

during his residence in China, had learned its invaluable properties. The Japanese, however, do not drink their tea as an infusion, but grind the leaves into powder, pour hot water upon them, and stir them with a bamboo-stick till they are thoroughly mingled together, when they swallow the decoction and the powder together, as is done with coffee in some parts of Asia.

* The term "Bohea" is in fact only a corruption of the Chinese Wu-yi, which again is derived from Wu-i-kien, a well-known Chinese divinity.

30° of longitude, within which it can be cultivated without being affected by severe alternations of temperature. That part of North China, however, which lies between 27° and 33° N., seems on the whole to furnish the finest sorts,* where the mean annual temperature ranges between 61°. 7 and 68°, and in which fine weather with a rise of temperature follows upon a heavy rain-fall; the latter being as necessary for the speedy and luxuriant growth of the leaves, as the former is for eliciting their fragrance and other valuable qualities.

To form an idea of the enormous amount of tea which is annually cultivated in China, it suffices to remark that, after deducting the immense quantity consumed, there are more than 70,000,000 lbs. exported annually.

It is not our intention to give a disquisition upon the cultivation and preparation of the tea, the drying (*poey*), roasting (*tschóo*), perfuming and colouring of the leaves, in short, the long tedious process to which this valuable article of commerce is subjected from its collection on the fertile green slopes of the bush-covered hills of Bohea, till its arrival at the port of shipment in a form suited for exportation. We prefer here to confine our attention to a consideration of those experiments which have recently been made in China with respect to tea cultivation.

There are of the tea plant an almost endless variety of

* In Java, where the tea plant has been cultivated for a series of years, the mountain region from 4000 to 5000 feet above the sea, and with an average temperature of from 58°. 1 to 73°. 7, Fahr., has been found best adapted for the growth of the plant.

qualities, but only two species, viz. *Thea viridis* (green tea), and *Thea Bohea*,* and even these two have such few points of difference, that quite lately they were described by Fortune as one and the same species. Thus, too, it has been asserted in our own day that the green and black varieties of tea sold in Europe do not, as is universally supposed, belong to two different species of tea, but that the difference of colour, shape of leaf, flavour, &c., is exclusively due to varieties in the mode of preparing them for the market, and that the manufacturer is able to make from the leaves every description, black or green, which is required in commerce. Thus in the celebrated tea district of Ning-tschan, where in former days black tea was exclusively grown, there is now procured green tea from the same species of plant, apparently because its cultivation pays better, while the quality remains in its olden repute.

The black tea, which constitutes four-fifths of the entire export to England, is grown of a particularly fine quality in the district of Kien-ning-foo in the province of Fo-kien, and is known to commerce by a variety of names, chiefly derived from the localities in which it is grown, or those of their proprietors. On the other hand, the green sort selected for

* The first scientific arrangement of the tea plant according to dried specimens was made in 1753 by Linnæus, who in his *Species Plantarum* included among these one species, which he called *Thea Sinensis*. But by the time the second edition of his renowned work made its appearance in 1762, Linnæus found himself compelled to make two species of it, and to assign them the names by which they are known to the present day. The first living tea plant was brought to Europe in October, 1763, by a ship-captain named Ekeberg, and planted in the Botanic Garden of Upsala.

exportation is chiefly met with on the slopes of the chain of hills between Che-kiang and Ngan-hwui. Besides those descriptions actually prepared on the spot where they grow, there are also an immense variety of teas manufactured in Canton from all sorts of black and green tea. The tea-growers of Canton are reputed to colour their green teas artificially, by sprinkling them with a mixture of Prussian blue and pulverized chalk, after which they subject them to a rolling motion for a considerable time in heated copper pans.*

One most important element in tea cultivation is the method adopted to impart a certain bloom, an artificial fragrancy, which it does not possess in the natural state. This process of "scenting," as it is called, which is practised exclusively for the foreign market, is termed by the Chinese *Hwa-hiang*. The flowers which are used for imparting this fragrance, and the growth of which, like the invisible fields of odoriferous herbs near Cannes, in the South of France, forms a most important branch of cultivation near Canton, are chiefly *Jasminum sambac, Jasminum paniculatum, Aglaia odorata, Olea fragrans, Sardenia florida,* orange-blossom, and roses. The method of "scenting" consists simply in placing a definite quantity of the flower-blossoms, varying according to the strength or feebleness of the odour, in juxta-position with about 100 lbs. of dried tea leaves, where they are suffered to remain from 24

* According to Fortune ("A Residence among the Chinese." London, 1857. Murray), the various sorts of tea have added to them from two to four spoonfuls of a mixture in which the plant *ma-ki-holy* largely enters, as also indigo and pulverized *gypsum*, in order to increase the green tinge of the leaves.

to 48 hours. Thus 40 lbs. of orange-blossom, 50 lbs. of Jasmin, 100 lbs. of *Aglaia odorata*, are reckoned the equivalent respectively of 100 lbs. of tea-leaves. The extraordinary costliness of these fragrant blossoms * has caused a very general suspicion to prevail, that the leaves thus "scented" are afterwards adulterated with large quantities of the common teas. And as it is an ascertained fact that 60 lbs. of such tea can impart a similar fragrance to 100 lbs. additional by merely mixing the two together, without any apparent diminution of fragrance, it seems more than probable that similar admixtures, very possibly in a still more profitable proportion, are being silently carried on every day in the warehouses of the tea districts.

Since the suppression of the East India Company's monopoly, and the opening of the Five Ports, tea has somewhat fallen in price, but has in consequence gained in far greater ratio in respect of quantity shipped. The value of a picul of tea is at present about 18 or 20 taels (£5 12*s.* 6*d.* to £6 5*s.*), so that the pound costs 1*s.* 1*d.* to 1*s.* 2*d.* Notwithstanding the unexampled cheapness of hand labour (60 to 70 cash, or 2½*d.* to 3*d.*, per diem), it is not possible to procure *good tea* below this limit, although the various descriptions vary extraordinarily in price according to their quality and the districts they come from. The lower classes in the tea districts purchase for themselves the raw unprepared leaves just as they

* A picul, 133⅓ lbs., of these leaves costs on the average 15 to 18 dollars, though it occasionally ranges as high as 30 dollars.

are plucked, for about 1*d.* per pound, and as it takes about 4 lbs. of the fresh leaves to make 1 lb. of dry leaves, it may be calculated that the tea, as drunk by this class, must cost from 4*d.* to 5*d.* per lb. Moreover, it is customary to add some of the less costly descriptions, more especially in districts at some little distance where the tea plant is cultivated.

The first historical document referring to the introduction into England of tea as a beverage, is an Act of Parliament in the year 1660 (the year of the Restoration). At that period China tea cost sixty shillings the pound, which of course limited its use to a very narrow circle. At present there are 30,000,000 lbs. imported into England* annually, or more than one-half of the entire export from the Central Empire, the consumer in London paying about 3*s.* per pound on the average.

Of late years attempts have been made to cultivate the tea plant at the foot of the Himalayas, in Java, and in the United States. In Hindústan, whither only a few years ago that well-known and enlightened gentleman, Mr. Robert Fortune, dispatched 24,000 plants, selected from among the finest tea districts, the experiment has already proved successful, and even remunerative. The cost of growing is about 10½*d.*

* In the year 1859, the exports into England were 30,988,598 lbs. (viz. 22,292,702 lbs. black, and 8,695,896 lbs. green), out of a total export of 55,323,731 lbs. Within the same period 19,952,147 lbs. went to the United States, 1,879,584 lbs. to Australia; to Hong-kong, and other ports along the coast of China, 1,261,347 lbs.; to Montreal, 510,600 lbs., and to the entire continent of Europe 736,455 lbs.

per lb. for one description, which fetches 2*s.* per lb. in the London market. That grown in Java has hitherto been viewed with disfavour in Europe, but in a few years more it must make its way. The result of the experiments in the United States we have yet to learn. Mr. Fortune, who was intrusted by the Patent Office at Washington with superintending the introduction of the tea cultivation into the Southern States, and who in virtue of many years' scientific researches in China may be regarded as an authority upon this subject, is of opinion that the possibility of cultivating tea in the United States does not admit of a doubt, since the plant not only successfully resists frosts, but even, in a measure, benefits by them, it being a well-known fact that it flourishes better in the northern than the southern climates of China. It is questionable, however, whether its cultivation can prove remunerative in a country where labour is still so exceptionally high. Will the tea plant repay the immense cost of cultivation, and compete successfully with the product of China? The next few years will settle this question, if it be not choked by this unholy fratricidal war, which is raging within the freest and most glorious confederacy of modern times.

We enjoyed the good "fortune" while at Shanghai of becoming personally acquainted with Mr. Fortune, and of gathering these valuable particulars from the very lips of that distinguished naturalist and traveller. While reserving for consideration elsewhere the subject of various little known, but most

important, articles of export from the vast Empire of China, we cannot refrain from indulging in a few remarks upon some useful products of that country, which seem to us of more than merely commercial importance. Among these we shall notice first one of the most valuable rewards bestowed by Nature on human industry, the so-called Chinese sugar-cane (*Sorghum*, or *Holcus saccharatus*), which deserves the earnest attention of all European proprietors of land, as it grows in its native country quite in the northern districts, in fact in latitudes where the ordinary cane (*Saccharum officinale*) no longer flourishes; because frost and cold are much more conducive to its growth than the opposite extreme, so that it would seem to be specially adapted for cultivation in Southern Europe.

The first attempt to cultivate this cane in Europe was made, if we are rightly informed, at the Hyères islands by Count David de Beauregard, from seeds which M. de Montigny had sent home to the Geographical Society of Paris, while other attempts were made at the same time in various parts of France by the *Société d' Acclimatisation*. The results surpassed the most sanguine expectations. From the stem there was obtained a juice from which sugar and alcohol, syrup and brandy, can be easily made. The abundant leaves, five or six feet long, furnished a considerable quantity of cattle with most nutritive food; the seeds were used as food for poultry, and were even substituted with advantage for barley in the provender supplied to horses, so that the experiment at once

repaid its cost, while in addition to the foregoing, the flour obtained from the seeds was found to furnish a highly nutritive, wholesome article of diet for man. Dr. Adrian Sicard, to whom the agricultural world is indebted for a very exhaustive analysis of the Chinese sugar-cane, has established, by conclusive researches, that its leaves are also specially adapted for the manufacture of paper, as well as for various colours or dye stuffs. As to the remunerative value of the *Sorgho*, it is more than 230 per cent. more productive than beet-root, which in France produces on the average 2160 kilogrammes per hectare, while the *Sorgho* makes a return of 5000 kilogrammes.

The mode of cultivating this useful plant differs in no respect, as we repeatedly had occasion to observe, from that of maize or Indian corn. The season for sowing varies with the temperature of the country, between the months April and July. The seed when sown in the beginning of April will be ripe about the middle of August, or in 135 days, while that sown in mid-July will not be ripe before the end of November, or about 140 days. In France the experiment has been made of bathing the seeds in tepid water for periods varying from 24 to 48 hours before sowing, which resulted in a much more speedy bringing forward of the plant. In like manner experiments were made of sowing the seeds with and without their husk, the result of which was that the former took 15 days, and the latter only 10 days to sprout. It is recom-

mended to plant the seeds in furrows sufficiently separated from each other according to the conditions of soil and irrigation, so far as is possible.

The period of germination of the *Sorgho* is rather long, but once that period is passed, the most favourable results are sure to follow, even should the most unusual alternations of temperature ensue, provided the thermometer does not descend below 27°.5 Fahr. The *Sorgho* requires about five months to attain its full ripeness, when it is usually of a pale-yellow colour, streaked with red. It is occasionally subject to different maladies, some of which attack the root, others the pith. In like manner the larvæ of certain noxious insects have been remarked on occasional specimens. But the origin of all these drawbacks has been as yet far too little inquired into, and they are of too rare occurrence to permit of any definite information respecting them being as yet available.

On the whole, the cultivation of the *Sorgho* may be regarded as eminently successful in the South of France, as well as in Pennsylvania, U. S. (which has a much severer climate than Venetia, Dalmatia, or the lower course of the Danube). Very probably we may also succeed in naturalizing the *Sorgho* in suitable parts of Austria, and introducing there the cultivation on a commensurate scale* of a plant,

* Some experiments on a small scale were made with the *Sorgho* at Aquileia near Görz, by M. Karl Ritter, a well-known merchant and sugar refiner, of Trieste. We were shown samples of refined sugar, extracted from the *Sorgho*, which promised

which bids fair not merely to prove far more profitable in cultivation than any other member of the vegetable kingdom in any part of the earth, but at the same time seems destined at no distant period to be the means of supplying the civilized world with one of its most vitally necessary articles of food, by means of free white labour, without the assistance of slavery!*

Another plant, which it seems likely might be advantageously introduced into the southern districts of Europe, is

the best results. A large quantity of seeds which were sent a year ago to one of the members of the *Novara* Expedition by M. de Montigny had been made use of to institute a series of experiments in cultivation, in those parts of the Empire, the climatic conditions of which promised to be most favourable for the growth of the *Sorgho*.

* During our stay at Shanghai we also made inquiries as to an alleged new species of potato, concerning which there have been current for years such contradictory accounts in the European and American journals, that the foreign community of Shanghai was beset with inquiries from all parts of the world, begging for more accurate information as to this newly-discovered tuber, which promised to supply a much-needed substitute for the apparently effete, worn-out, disease-smitten potato of Peru. No one, however, could furnish us with the slightest information on the subject, and ultimately it became apparent that the rumours hitherto current were founded on an erroneous impression. It would seem, according to the opinion of Mr. Fortune, that the rumour first arose from mistaking for a new sort of potato, the *Calladium esculentum*, which is quite commonly exposed for sale in the streets of Shanghai, and the small tubers of which, both in flavour and external appearance, resemble those of the potato, when, without taking the slightest further trouble to inquire into the matter, the pretended new discovery, fraught with such important results for the poorer classes, was duly trumpeted to the entire world. In no part of China hitherto accessible was there at the time of our visit any other description of potato in use than the common Peruvian. Officers of the English and American navies, who at the time of the first Peace of Tien-Tsin were eating potatoes in the Gulf of Petcheli, assured us that they were precisely identical with those that have so long been acclimatized in Europe. Of edible tubers there are at Shanghai, besides potatoes, the yam (*Dioscorea* sp.) and the Yucca (*Jatropha* sp.).

the *Mo-chok*, one of the most graceful kinds of bamboo found in the forests of China, which grows in greatest luxuriance on the limestone slopes of the province of Tschi-Kiang, in a climate ranging between 90°.5 in summer, and 20°.3 (Fahr.) in winter. The erect, smooth, elegant stem shoots up to a height of from 60 to 80 feet. The lower part of the tree is usually free from branches, which usually begin to spring from the trunk about 20 feet from the ground, and are very delicately leaved. These and two other species, the *Long-sin-chok* and the *Hu-chok*, are used in the manufacture of sieves, baskets, furniture, &c., while the tender shoots form a most nutritious and delicately flavoured vegetable. The stem of the plant is moreover available for the manufacture of paper.*

Writing paper is manufactured from it as well as packing paper, and one very coarse quality is mingled with the mortar by the Chinese masons. Mr. Fortune has introduced the Mo-chok into China, where, especially in the north-west provinces, it promises to come on well upon the slopes of the Himalaya.

Of the other plants which grow in China, which are not indeed suited for transplanting to a colder climate, yet merit

* The following is the process as we observed it: the bamboo strips are first soaked for a considerable period in water, after which they are peeled, and again saturated with lime-water, until they are perfectly flexible. After this, they are converted, according to the method in use at that special locality, either by water power or hand labour, into a fluid of a pap-like viscosity, after which it is boiled till it has attained the requisite fineness and consistency for conversion into paper.

attention on account of their produce, we shall briefly notice the varnish tree, the tallow tree, and the wax shrub.

The varnish tree (*Vernix vernicia*), a sort of sumach, which grows in greatest luxuriance in the provinces of Kiang-si, Chi-kiang, and Sze-chuen, furnishes that varnish which, partly in a semi-fluid, partly in a dry state, comes to market in whitish cakes, and is worth, according to quality and demand, from 40 to 100 dollars per picul of 133 lbs. In the preparation of this lacquer, the reputation of which has extended over the globe, $6\frac{2}{3}$ lbs. varnish, $13\frac{1}{2}$ lbs. water, $41\frac{2}{3}$ lbs. nut-oil, $16\frac{2}{3}$ lbs. of pigs' gall, and $33\frac{1}{3}$ lbs. of vinegar, are mixed together till the whole assumes the consistence and appearance of a shining black paste. The fact that many Chinese lacquered wares, especially those prepared in Foo-chow, vie with the renowned manufactures of Japan in beauty and lustre, leaves room to suspect that the Chinese workmen have received some instruction from their Japanese fellow-craftsmen.

Vegetable tallow (*Schulah*, or *Schu-káu*, tree fat) is obtained from the *Stillingia sebifera*, the so-called tallow tree, and, judging by the experiments made with it, promises under an extended system of cultivation to become a tolerably profitable article of export. The tallow tree flourishes throughout the southern provinces, but is chiefly found in the island of Chusan and the coasts adjacent. The tallowy substance procured from the seeds, which externally resemble nuts, is sold in cakes of from 90 to 130 lbs. at from 7 to 12 dollars.

Vegetable or tree wax (*peh-lah*) is a waxy substance, which the *coccus pela* or *flata limitata* deposits, apparently as a protection to its eggs, on a sort of ash tree, on whose twigs and boughs it is deposited like snow-flakes. It is gathered after the first frost, and purified by melting it in a cloth held over hot water. Apparently the process is varied by dipping what has been collected in a silken sack into hot water. It melts at 81° Fahr., and in consequence of its unusual stiffness is much used for admixture with bees-wax and other descriptions of fats used in the manufacture of tapers. The candles hitherto made in England of this substance have commanded a large sale, and only the circumstance that as yet but a small quantity has found its way into commerce, prevents its being much more extensively cultivated. The price of *Peh-lah* is rather high, as it fetches about £11 10*s.* per 133 lbs.

Passing from the various natural products furnished for export by China to a consideration of those articles* of European industry, for which the Chinese market supplies an ample demand, we find that their number is considerable, while they represent a value of upwards of £5,000,000. In these pages, however, we propose to notice only that article which is the most profitable, and undoubtedly forms the chief staple of import in all the harbours opened to foreign commerce, viz. opium. Opium (*á-piën*), the solidified sap of

* These consist chiefly of cotton and woollen goods of every description, steel cutlery, iron-ware, glass, clocks, watches, musical clocks, tin-ware, &c.

Papaver somniferum, was, as every one knows, up to quite a recent period, a monopoly of the Anglo-Indian Government, by whom it was cultivated under the superintendence of agents in the various provinces of Hindostan, and sold to the trade by public auction in large quantities at a time in the markets of Calcutta and Bombay. It seems to fulfil among the Chinese the function of the various spirituous liquors of Europe; at least every attempt to introduce among the Chinese a taste for ale, whisky, sherry, port, champagne, and claret, has hitherto entirely failed. Indeed there is probably no country of the globe where, in proportion to population, there is so little spirituous liquor introduced as into China, what is imported being almost exclusively for the consumption of foreigners. The Chinese is emphatically a born "teatotaller," or friend of abstemiousness, for the native drinks, substitutes for wine, which are obtained chiefly from rice and millet, are only used on special occasions, and then only in small quantities. During our entire stay in Chinese waters, we never saw one single Chinese drunk, and heard in every quarter that any such cases are rare and quite exceptional. On the other hand, the consumption of opium is continually increasing, and the quantity of solidified poppy-juice annually imported amounts to from 75,000 to 80,000 chests, which at current rates represent a value of from £7,500,000 to £10,000,000. There are four descriptions of opium that come to the Chinese market, viz. Benares (*Ku-ni*), Patna (*Kung-ni*), Malwa (*Peh-pi*), and Turkish (*Kiu-ni*

or golden dung). Of these the Patna and Benares are reckoned of finer quality, and consequently are more sought after, than that imported from Malwa, but both descriptions are preferred by the Chinese to the Turkish, and even to that produced at home.*

The custom of opium-smoking is of comparatively modern introduction among the Chinese. 'It was about the commencement of the 18th century,† that the practice of mingling opium with tobacco as an antidote against tooth-ache, headache, and pains in the body first began to prevail.' Chinese sailors and merchantmen, returning from the islands of the Bornese Archipelago, had learned from the natives to inhale it as an anæsthetic, which, depriving them of all activity, brought the most delightful visions before their eyes. It is unquestionably the prohibition of wine to the believers in the Koran which first directed their attention to this narcotic substance, which the Western Asiatics swallow in pills, the Hindoos chew, and the Chinese smoke. In 1750, there were imported into China from Turkey, Persia, and Bengal, chiefly by Portuguese merchants, some 200 to 250 chests according to official return (of 140 lbs. each), ostensibly for medical use.

* The quantity of home-grown opium, chiefly produced in the province of Yun-nan, cannot be accurately ascertained, as the returns are not made at certain points; but the quantity must fall far short of the amount imported from India.

† According to MacCulloch's Commercial Dictionary, opium had been introduced into China and India by the commencement of the 16th century by Mahometan merchants, and it sounds like an apology when the learned and patriotic author, in treating of the part taken by England in the much-to-be-lamented traffic in this noxious drug, adds by way of palliation—"A century and a half before the English had *anything* whatever to do with its *cultivation*."—(Latest edition, p. 939.)

Nothing could be more welcome to the entire Empire than a means of passing the intervals of relaxation from the hurry of business, in a state of absolute exemption from all anxiety, rocked in the most delightful slumbers! In 1773 the East India Company sent a small portion of opium to China by way of speculation. Seven years later they founded an Opium Dépôt in Larke's Bay. In 1781 the Company sent 2800 chests (of 140 lbs. each) at one single shipment to Canton, where it was purchased by a "Hong," or Association,* for trading purposes. The Company found itself compelled, however, to re-export a quantity, as at that period there was not in China a sufficient demand for such a supply. The first regular shipments began in 1798, when 4170 chests were sent to the account of the Association in China, and then sold at Rs. 415 (about £41 10*s.*) per chest.† Since that period the import and consumption have been steadily increasing at a geometric ratio, and a table now before

* Only a certain number (originally twelve) of wealthy Chinese merchants, "Hong," were permitted by law to trade with foreigners at Canton. They had not only to account to Government for all duties and taxes, but were likewise responsible for the good behaviour of the strangers!

† It is a coincidence worthy of notice, that simultaneously with the rise of the opium trade with China, the importation of slaves into America began to increase, and that European commerce in these two infamous traffics seemed to be ever increasing and gaining ground in Eastern Asia and in America! At the end of last century the number of slaves in the Southern States of the Union was little greater than that of opium-smokers in China: at present the number of the former is about 4,000,000, and the latter may be put at about the same figure; the latter, slaves of their own intemperate passions,—the former, of the covetousness and cold calculating selfishness of their masters. The opium question and the slave question—these two seem destined to be solved simultaneously!

us, drawn up with great labour and industry by Dr. Medhurst, informs us that between 1798 and 1855 there were imported altogether 1,197,041 chests of opium from Bengal, which, after deducting all expenses of cultivation and shipment, represented a net gain to the East India Company of £67,851,853.*

Relying on the splendid profits secured to the East India Company, and its colleagues settled in China, by the opium traffic, no one troubled himself in the slightest with the many protests of the Chinese Government, any more than the anathemas launched at opium dealers and opium smokers by English missionaries and philanthropists. The dealers, growing richer day by day, contented themselves with laconic replies to the more virulent of their antagonists, to the effect that they were but supplying a want originating in a national custom, and that it was as futile to attempt to prevent the Chinese from smoking as to restrain Europeans from the use of spirituous liquors. Both when abused are productive of much evil, and even then opium was productive of far less destructive ravages on the human organism, and was never followed by such appalling catastrophes as those resulting from alcohol. The dark side of the opium traffic has since been so fully exposed, that but little more remains to be said, and although even the most sanguine persons

* A very similar result is arrived at by MacCulloch, who calculates that the Company cleared 7*s.* 6*d.* per lb. on opium, which they bought by their agents from the Bengal ryots at 3*s.* 6*d.* per pound, and retailed at 11*s.* per pound.

have ceased to hope that the trade can ever be entirely suppressed, yet it is at least consolatory to know that, according to the best calculations, the number of opium smokers throughout China, in a population that is to say of 420,000,000, is not above 4,000,000 to 5,000,000, and that an ordinary smoker does not on an average consume more than one mace or about one drachm * of opium, worth about 90 cash, or $3\frac{1}{2}d$. The provisions of the new tariff, by which opium may be imported unrestrictedly on payment of a fixed duty of 30 taels (about £10) per chest when water-borne, and 80 taels (about £6 10*s.*) when imported by land, must materially effect the opium trade as hitherto carried on, and may very possibly alter the views at present entertained by the Chinese Government with reference to this important article of commerce, in proportion as its treasury begins to be replenished by such a high rate of duty.

Although for European readers the chief interest of China is to be found in its relations with foreign countries, we yet cannot take leave of it without a few remarks on the momentous political movement which has been on foot since 1849 in several provinces of China, and claims, in consequence of its peculiar religious nature, universal interest.

Hung-sin-Tsuen, the originator and head of this rebellion,

* There are indeed smokers who smoke their two, four, five, and even eight drachms per diem, but these are solitary instances, while the very costliness of the article forbids the use of the narcotic to the great mass of the population, except in the very smallest quantities.

was born in 1813, in a village near Canton, and while yet in his early youth was, in consequence of his precocity, removed from tending his father's flocks to be a scholar in the village, where he pursued his studies with such zeal, that a year later he took several degrees as a teacher. On one of his visits to Canton, he made the acquaintance of a Protestant missionary, with whom he long corresponded, and from whom he received a variety of tracts translated into Chinese, and books, by way of presents. In the course of a serious illness with which he was assailed about this period, he had numerous visions, and is said in his delirium to have insisted on being hailed Emperor of China. Gradually Hung and his friend and zealous adherent Fung-Yun-San became, through erroneous or wilful misinterpretation of the works of various missionary societies, the founders of a new creed, a sort of free, semi-Christian sect, which, as it could not long subsist without coming into collision with the reigning Government, very speedily assumed a political character. It is an indubitable fact that at first the religious movement was supported by the Protestant missionaries, and the views of its founders forwarded by every means in their power, with the object of using it to prepare the soil for the promulgation of Christianity. When about entering his forty-first year, Hung formed an alliance with American missionaries stationed at Canton, studied their books, after which he returned to the province of Kuang-si, where he published writings descriptive of the alleged manifestations of the Deity, gave

himself forth as a poet,* and at the same time issued proclamations under the designation of the "Heavenly King." The severity with which the regular Government treated the insurgents, and all who consorted with them, only served to augment their ranks, to which the mysticism of their doctrine contributed in no small degree; for the credulous masses have in all lands the same love of the marvellous and unintelligible. Such a result only increased the courage, the energy, the arrogance of Hung. He no longer was content to announce himself as "the mouth through which God the Father, and Jesus the Elder Brother, declared their will;" he now proclaimed boldly the intention of himself and his followers to overthrow the unworthy Mantchoo dynasty, and raise to the throne a new native dynasty, that of the Tai-ping, or universal peace. Although stigmatized by the official *Pekin Gazette* as "local banditti," they were nevertheless strong enough in March, 1852, to storm even such a

* One poem of the Chinese Imperial Pretender, which is not included in Dr. Medhurst's collection of the writings published by the insurgent press at Nankin, and for a copy of which we have to thank Mr. Meadows, Government interpreter at Shanghai, has lately been translated by our learned countryman, Dr. Pfitzmaier. The splendidly got up binding of this little book is of a golden yellow on the title page, and red on the reverse; the river Yang-tse-kiang appears to pay homage to the Tai-ping, whose residence it surrounds. The title printed on the exterior of the wrapper runs as follows: "Imperial announcements in theses upon the words of the Heavenly Father, the Most High Ruler." The title within is: "Ten poems upon Supreme Felicity," although these so-called poems are simply strophes, never exceeding four verses of seven feet. The writing bears date the number *Kuei-hao* (50), corresponding to A.D. 1853, the third year of the reign of the Heavenly King, Tai-ping. The whole production is, if that be possible, yet more bombastic, unintelligible, and stupid than Chinese poems usually are to Western readers.

populous city as Nankin, where they set up a provisional government, and have since fortified it as their head-quarters. At the time the Tai-ping rebellion first broke out, Yeh, the then Governor of Canton, thought he would readily be able to suppress it by the summary process of chopping off the heads of all who were supposed to be in correspondence with them, and thus had as many as 800 executed daily.* It was no longer quite safe for a native to show himself in the streets of Canton, unless provided with a paper of identification. For this purpose, four-cornered pieces of a sort of white cotton fabric were worn, on which was printed a sign in red. These cotton strips served as countersigns for those friendly to the reigning dynasty, and were worn concealed from view, but so as to admit of being at once shown in case of need. Dr. Pfitzmaier, who has examined this sign, is of opinion that it is simply a union of the three signs 心手加 which, so far as the two last are concerned, seem to have been compressed together and abbreviated, so that only the initiated could understand its significance. The learned sinologue is of opinion that this hieroglyphic, signifying "to offer hand and heart," or "to offer the original (own) heart," has nevertheless no meaning apart from the centre figure, which, however, is unusually distorted, so that

* Between February and September, 1855, there were executed in Canton 70,000 persons all told. Many of the rebel leaders were, in conformity with the *penal laws*, hewed in numerous pieces while yet living; a certain Kausin in 108! See K. F. Neumann's History of Eastern Asia, from the first Chinese war to the Treaty of Pekin, 1840—1860. Leipzig, Engelmann, 1861.

the whole may also mean 惠加 Kia-hoei, "to yield grace and benevolence," or may be applicable to him who wears it, "one who enjoys the all-embracing Imperial clemency."

The religious direction of the Tai-ping movement, coupled with its apparent Christian tendencies, its results, and, above all, the last hostile proclamation of the Pekin Government against foreigners, roused the sympathies of both Europeans and Americans in favour of the insurgents; and in the English papers of Hong-kong and Shanghai, the policy was vigorously and repeatedly advocated of turning the insurrection to their own advantage; while in a religious point of view it was recommended to avail themselves of the favour shown to the Scriptures by the Christian sect of the Tai-ping, which was also so amicably disposed to foreigners, who at all events were more likely to prove a bulwark and support to English Protestantism than the deceitful, promise-breaking, idol-worshipping Mantchoos. Letters and communications, which from time to time were published on the visit of Protestant missionaries in the insurgent camp, were apt to propound the most favourable ideas about the insurgents and their strivings after religious truth, and to attach to their victories and successes the most glorious hopes with respect to the spreading of Christianity in China. Fortunately the English Government did not suffer its policy to be affected thereby, but continued to observe the strictest neutrality. Only in those cases where, owing to the advance of the

rebels, the interests of British subjects or of universal commerce seemed to be endangered, communications were held with the "Heavenly King" or his ministers, or to protest against the injury and limitation of trade with the earnestness and depth of impression which Armstrong guns are apt to impart to diplomatic dispatches. Thus the insurgents were prohibited from approaching within 10 Li of the city of Hang-kow, by this measure protecting not alone their own property, but the entire city from pillage and destruction. During the last war the interests of the insurgents were kept entirely in the background, and during the stay of the *Novara* at Shanghai, which had likewise been repeatedly threatened by the insurgents, we could gain but little enlightenment as to the nature and direction of the movement.

However, since the Treaty of Pekin has thrown open the navigation of the most important rivers, and thus facilitated communication with the interior, there has been a better opportunity than hitherto for intercourse with the Tai-ping, as also for obtaining a clearer insight into its present condition, as well as the object and inevitable consequences of their tenets. People are beginning to consider it more calmly, and even the missionaries seem gradually abandoning the expectations they had formed, of finding in it a means of helping the cause of Christianity, albeit a former missionary, Rev. J. C. Roberts, who in 1847 had spent

several months with Hung, is at the present moment a sort of minister of foreign affairs in the insurgents' camp at Nankin. The latest information respecting the Tai-ping enters so fully into the character of the whole movement, and so clearly developes its tendency, that no apology is needed for laying before the readers of every class a brief sketch of the more important and significant dogmas.

The Tai-ping translations of the Old and New Testament, though in the whole tolerably correct, yet are in certain parts so imperfect that they implanted the most erroneous ideas in the head of the "Celestial King." He conceived his own visions and revelations as far more important, and of far higher authority, than those of Holy Writ. His mission, as he himself states it, is to be followed by a new revelation, accompanied by numerous miracles, and a third book will be given to the world, which is to supersede the Old and New Testaments, and be called the "*True* Testament." According to Hung, both God and Christ have appeared in the human form. Christ is not equal to the Father, that is solely God; he is also brought into connection with other redeemers, and has a wife and children in heaven.

The Celestial King and his son form with God and Christ a Quaternity in Unity. The corporeal presence of the Celestial King is that of the Godhead, and in the distempered imagination of the Tai-ping the government now existing in Nankin is assuredly that of heaven itself!

The Tai-ping suffer no one to preach against their creed, because that would be to diminish the authority of their chief, and damp the ardour of their hopes. In their various proclamations it is expressly declared that Hung-sin-Tsuen is the brother of the Saviour, the Son of God, without any other distinction than such as must exist between an elder and a younger brother. They maintain that there is a celestial mother as well as Father, a heavenly sister as well as a heavenly Brother, and that the recently defunct King of the West, Fung-yun-san, one of Hung's oldest adherents, is now married to the heavenly sister. They hold to the opinion that not one of such of their revelations as clash with the Old and New Testaments, can be decided by such ancient books of religion. Their revelations being the newest, are on that account the most entitled to belief.

In a letter of greeting addressed by Hung to Roberts * the

* We extract from the *London and China Telegraph* of 31st March, 1862, the following severe but just criticism on this gentleman, whose letter, which we also quote, shows him to be a person of but limited education:—"Even the Rev. J. Roberts, who, as our readers are aware, has lived with the rebels at Nankin, and has to his discredit defended their conduct in the strongest possible manner, has at length discovered that they are nothing better than robbers and murderers. This change of opinion in a man who on all occasions so confidently urged the claims of the Tai-pings, arose from a very simple cause:—he at length suffered, personally, from their barbarity. A servant to whom he was attached was killed before his eyes; and considering his life in danger, he fled to Shanghai, and wrote the following letter, dated 22nd January, 1862, reprobating the conduct of his former friends:—'From having been the religious teacher of Hung Sow-chuen in 1847, and hoping that good—religious, commercial, and political—would result to the nation from his elevation, I have hitherto been a friend to his revolutionary move-

missionary, on the occasion of the arrival of the latter at Nankin, in October, 1860, Hung narrates his heavenly

ment, sustaining it by word and deed, as far as a missionary consistently could, without vitiating his higher character as an ambassador of Christ. But after living among them fifteen months, and closely observing their proceedings—political, commercial, and religious—I have turned over entirely a new leaf, and am now as much opposed to them, for good reasons, I think, as I was ever in favour of them. Not that I have aught personally against Hung Sow-chuen, he has been exceedingly kind to me. But I believe him to be a crazy man, entirely unfit to rule, without any organized government, nor is he, with his coolie kings, capable of organizing a government of equal benefit to the people of even the old Imperial Government. He is violent in his temper, and lets his wrath fall heavily upon his people, making a man or woman 'an offender for a word,' and ordering such instantly to be murdered without 'judge or jury.' He is opposed to commerce, having had more than a dozen of his own people murdered since I have been here, for no other crime than trading in the city, and has promptly repelled every foreign effort to establish lawful commerce here among them, whether inside of the city or out. His religious toleration and multiplicity of chapels turn out to be a farce, of no avail in the spread of Christianity, worse than useless. It only amounts to a machinery for the promotion and spread of his own political religion, making himself equal with Jesus Christ, who, with God the Father, himself, and his own son constitute one Lord over all! Nor is any missionary, who will not believe in his divine appointment to this high equality, and promulgate his political religion accordingly, safe among these rebels, in life, servants, or property. He told me soon after I arrived that if I did not believe in him, I would perish, like the Jews did for not believing in the Saviour. But little did I then think that I should ever come so near it, by the sword of one of his own miscreants, in his own capital, as I did the other day. Kan-Wang, moved by his elder brother (literally a coolie at Hong-kong) and the devil, without the fear of God before his eyes, did, on Monday the 13th inst., come into the house in which I was living, then and there most wilfully, maliciously, and with malice aforethought, murder one of my servants with a large sword in his own hand in my presence, without a moment's warning or any just cause. And after having slain my poor harmless, helpless boy, he jumped on his head most fiend-like and stamped it with his foot; notwithstanding I besought him most entreatingly from the commencement of his murderous attack to spare my poor boy's life. And not only so, but he insulted me myself in every possible way he could think of, to provoke me to do or say something which would give him an apology, as I then

journey in 1837, the repeated miraculous interference of the Father and the Son in his favour, as also the revelations made to the Eastern King. He professes to have seen the Father and Christ, the heavenly mother and the heavenly sister. He is himself "the Way, the Truth, and the Life," just as Christ is. He warns Roberts repeatedly, that implicit belief in this is of the highest importance, as otherwise he can neither be useful in this world nor blest in the next. After such an exposition, Christian missionaries will scarcely be suffered in the insurgent's camp if they dare to preach against such errors, not to say blasphemies.

There are but few religious ceremonies. The Tai-

thought and I think yet, to kill me, as well as my dear boy, whom I loved like a son. He stormed at me, seized the bench on which I sat with the violence of a madman, threw the dregs of a cup of tea in my face, seized hold of me personally, and shook me violently, struck me on my right cheek with his open hand; then, according to the instruction of my King for whom I am ambassador, I turned the other, and he struck me quite a sounder blow on my left cheek with his right hand, making my ear ring again; and then perceiving that he could not provoke me to offend him in word or deed, he seemed to get the more outrageous, and stormed at me like a dog, to be gone out of his presence. 'If they will do these things in a green tree, what will they do in the dry?'—to a favourite of Teen Wang's, who can trust himself among them, either as a missionary or a merchant? I then despaired of missionary success among them, or any good coming out of the movement—religious, commercial, or political—and determined to leave them, which I did on Monday, Jan. 20th, 1862.' Mr. Roberts adds that Kan-Wang had refused to give up his clothes, books, and journals, and that he had been left in a state of destitution. Most persons will agree that he fully deserves any amount of suffering that may be inflicted on him. Mr. Roberts has done his utmost to delude Europeans as to the true character of the Tai-pings; he has kept back some facts, has falsified others, and has acted throughout in a manner utterly inconsistent with his assumed character of a Christian missionary. On such conduct no comment can be too severe."

ping, indeed, call one day of the week the day of prayer, and it happens more through oversight than intention to be fixed upon the Saturday, but so far as external sanctity goes there seems to be no special attention paid to it. They buy, and sell, and delve just as on other days. On the previous night about ten o'clock two or three cannon-shot are fired to announce the approach of the hour of prayer, and that the day of worship is at hand. Every family is engaged for an hour in devotion and praise. All strangers who have been in communication with the Tai-ping in Nankin state that, even in the capital where he has been resident for seven years past, that dignitary does not observe the Sabbath in any way, either by preaching, prayer, or expounding of the Scripture; there are no exhortations or pious admonitions; they have neither church nor temple; their sole divine service consists in each one reciting in his own house English hymns, and repeating a few prayers, while divers offerings are made, such as tea, rice, and the flesh of slain animals. They offer their prayers kneeling, after which they close the proceedings by singing a hymn standing. An English missionary, who arrived at Nankin with the conviction that the insurgents were genuine sincere Christians, made, after a short stay, the following severe but just remark concerning them: "I found to my regret no trace of Christianity, but a system of the grossest idolatry substituted for it, and arrogating its name. Their notion of God is so distorted,

that it is, if possible, still more erroneous than that entertained of the Supreme Being by other idol-worshipping Chinese. Their conception of the Redeemer, to whom they pay equal honours, is crude, and thoroughly material. Their prayers, far from giving the impression of a true reverence of God, have much more the appearance of an idolatrous mockery of sacred things!"

An English merchant, who accompanied Sir Hope Grant on his reconnoitring excursion up the Yang-tse-Kiang, and spent a week in what used to be called Nankin, now the celestial capital of the Tai-ping, gives the following characteristic sketch of them: "The insurgents take no interest in and do not encourage trade, except in muskets and ammunition. To our representations how unwise it was to lay waste towns and villages, and shut out commerce, they promised, after peace was concluded, to erect schools and other similar institutions, and professed their willingness to promote trade, but 'for the present,' they went on, 'we must, before anything else, make the hills and the rivers subject to our power.' On the whole I found the condition of the rebels far better than I had expected. They are comfortably clothed and well fed. The population of Nankin consists exclusively of officials. No one not connected with the administration of the army is admitted within the gates of the city. The majority of the inhabitants, who number about 20,000, are prisoners and slaves from every part of the empire. Although employed

in most arduous work, they get no pay, but are simply clothed and fed. I remarked an extraordinary number of beautiful young women in elegant silken stuffs from Sutschan. There were also prisoners of war from Sutschan and other places, who, however, were by no means inclined to lead a very Christian and moral life in the celestial capital. The city of Nankin, as well as its suburb, the beautiful ancient cemetery of the Ning dynasty, and the far-famed porcelain Pagoda, are all utterly destroyed; instead of the broad well-paved streets of former times the stranger has now to pick his steps through heaps of bricks and rubbish. The palaces of the kings of the Tai-ping dynasty are glaringly conspicuous among all these ruins. They must have been entirely rebuilt, for the old Yamuns and temples, like the whole of the Táu-Tái City, have been demolished utterly.

"The rebel chief inhabits a large palace. His household consists of 300 female attendants. He also, in virtue of his rank, has 68 wives supported for him. No one but the kings (of whom there are 11 or 12, but only two are resident in Nankin) is permitted to approach his sacred person. Probably Hung is little more than a mere puppet in the hands of his ministers. It is he who mainly keeps the rebellion on foot. Discipline is far better maintained among the long-haired insurgents than the imperial troops, and many of the younger soldiers have pleasing manners.

"The kings or Wangs, on the other hand, seem exceedingly

lazy and vicious, and when they make their appearance, with a theatrical attempt at assuming a dignified deportment, clad in the yellow costume of a mountebank, and with a tinsel crown upon their heads, they present a most ludicrous aspect. Not one of these so-called kings understands the Mandarin dialect, so widely diffused among the educated classes;—not one, except Hung himself and Kan-wang, has a better education than one of his coolies.* They have linguists at their elbow, who do their reading and writing for them.

"The arms of the Tai-ping are very wretched, and the bare fact that they are able to make head against the Imperial troops, speak volumes for the utter helplessness and incapacity of the Imperial Government. I have not the slightest expectation that any advantage will accrue to civilization or Christianity from the religio-political movement of the Tai-ping. No Chinese will have anything to do with them. Their whole activity consists in burning, murdering, and devastating. They are universally detested by the people; even those inhabitants of the city who do not belong to the 'Brotherhood' detest them. For eight years their head-quarters have been at Nankin, which they destroyed, nor have they as yet made the slightest attempt to rebuild it. Trade and industry are forbidden. Their taxes are three times higher than those of the regular Government. They take no measures to staunch the wounds which they have

Nankin accordingly is usually called now-a-days the "City of the Coolie-Kings."

inflicted on the people, nor do they occupy it as though they had any permanent interest in the land. They take no pains to tap those slow but sure springs of revenue, or to increase the resources of the state. They lay themselves out to maintain themselves by plunder. Nothing in their organization gives hope for any amelioration of the present or consolidation of power in the future; there is nothing in the entire history of the Tai-ping to enlist sympathy or compel confidence in a movement which, under the mask of religious reform, conceals the most hateful self-interest and terrorism, and under the pretext of spreading peace amongst men, brandishes the scourge of destruction and desolation among the provinces through which it has passed."*

On the 11th of August the *Novara* quitted her anchorage off Shanghai, and with the steam-tug *Meteor* † fastened to her side availed herself of a spring tide to make her way into the Yang-tse-Kiang. Off Wusung we awaited the arrival of the post,

* Very similar are the reports made by the English who, in Dec. 1858, accompanied Lord Elgin on his voyage of discovery up the Kiang, and remained a considerable period among the Tai-ping. "The tenets of their religion," says Mr. Laurence Oliphant (*vide* Earl of Elgin's Mission to China and Japan, vol. ii. p. 463), "consist of a singular jumbling of Jewish ordinances, Christian theology, and Chinese philosophy. Like the Jews in the Old Testament they wage wars of extermination, they live like the worst professing Christians, and they believe like—Chinese."

† The charges forwarded by the owners of the little *Meteor* for towing, and which are calculated according to the draught of water of the ship towed, was as follows:—

		15 feet and under.	15 to 17 feet.	17 to 18 feet.	18 to 19 feet.	19 ft. & all beyond.
and vice versâ.	From Shanghai to Gutzlaff's Island,	300 taels, or £90.	350 taels, or £105.	450 taels, or £135.	450 taels, or £135.	500 taels, or £150.
	Shanghai to Wusung,	150 taels, or £45.	175 taels, or £52 10*s.*	200 taels, or £60.	225 taels, or £62 10*s.*	250 taels, or £75.
	From Wusung to Gutzlaff's Island,	225 taels, or £62 10*s.*	250 taels, or £75.	275 taels, or £82 10*s.*	300 taels, or £90.	350 taels, or £105.

after receiving which we were on 14th August towed as far as Gutzlaff's Island. Here we had once more to lay to, owing to calms and currents, till at last on the 15th August a fresh breeze sprang up from the S.E., and enabled us to make an offing.

The temperature had materially altered during the last few days. After a cycle of oppressive heat the weather had suddenly changed to severe squalls, with a marked fall in the barometric column. The thermometer, which while we were lying off Shanghai marked from 86° to 93°.2 Fahr., now indicated in the morning only 68° Fahr., and during the day never rose above 77° Fahr. The number of fever cases, which had reached the number of seventy, began gradually to fall off. Several cases of dysentery forthwith began to show symptoms of amendment.

Considering the latitude we were in, and the season of the year, the barometer stood unusually high (30°.100), and although this might be attributable to the constant prevalence of easterly winds, we nevertheless knew we were approaching the period when the monsoon changes, and little reliance was to be placed on the steadiness of that from the S.E. Accordingly on the 17th the wind shifted round to N.E. by E., while our course was due S.E. This however rendered it necessary to tack, if we wished to pass to the northward of the Loo-Choo group, whereas we could run free and with a fair wind through the southern channel. The sun set behind a bank of dense clouds on the horizon. The western sky was tinged a deep red, and the stars shone out with uncommon brilliancy,

but with a sort of trembling ray. The barometer fell slowly but steadily; the sea began to heave perceptibly. Our course was now changed to S.E. by S.

The following morning the breeze freshened, and drew somewhat further aft; the sky was covered with clouds massed together, those to the N.E. of a very dark, almost black, colour. Wind and sea were now rising, the sky became more and more obscure, the barometer kept falling—there was every indication of the approach of heavy weather.

The 18th August, the birthday of our Emperor, was duly celebrated far on the open ocean, in the middle of the China Sea. All was prepared for Divine worship, which was to be celebrated at 10 A.M. on the gun-deck, in presence of the staff and the entire crew. The Commodore had invited several gentlemen of the staff to dinner. On land no one thinks of consulting the elements, when such a festival is to be observed, nor do the guests waste many thoughts on wind, rain, and heavy seas, as they assemble in their comfortable chambers. At sea, on the other hand, the conditions are altered. Wind and weather are the masters here, whose behests the sea-farer must attend to. This was our case on this 18th of August.

First, Divine service had to be dispensed with, because the sea became too heavy, rendering it necessary to close the port-holes in the gun-deck, where, as already mentioned, the service was to be performed. As the hour for the festival drew nigh, the elements gave unmistakeable evidence of their determined hostility; there was no room any longer to

doubt that we were about to do battle with a regular Typhoon.* This species of storm, which is very customary at the change of the monsoons in August, September, and October, when the N. E. trade suddenly veers round and becomes the S. W. monsoon, is, like the tornado of the West Indies, the Pampero of the eastern coast of South America, and the hurricane of the Mauritius, a whirlwind of the most colossal proportions and most tremendous fury, by which the atmosphere is swept in a circle at an astonishing velocity around a central point more or less calm, which does not, however, remain stationary, but is continually progressing, and hence they are usually termed *cyclones*, or circular storms, to distinguish them from those other storms in which the wind moves in a straight line. It has been reserved for scientific investigation to explain the extraordinary regularity of the laws in obedience to which the masses of air, in the case of such storms occurring in the Southern hemisphere, move in the direction of the hands of a clock, whereas in the Northern hemisphere they are rotated in an opposite direction. In like manner, the direction of the centre round which the *cyclone* is raging has been definitely ascertained, so that, provided with these data, it is not merely possible for the navigator to hold aloof

* Typhoon, or *Tei-fun*, a strong wind. While some authors derive this word from the Arabic *Tufan*, a violent wind, others see in it the giant *Typhos* of Greek mythology, who was begotten by Tartarus of Earth, and from whom proceeded all that was disastrous and destructive. Whoever has experienced a typhoon will most readily acquiesce in the latter derivation.

from the dangerous central point of these circular storms, where the best and stoutest ship that ever floated must almost to a certainty be swallowed up, but even to avail himself of the wind to reach the edge of the *cyclone* (the breadth of whose path is from 300 to 1000 miles), and thus make a rapid and prosperous passage. By mid-day the wind had increased to such an extent that we had to take in most of our sails, and reef the rest. The sea now rose, and many of its waves came thundering upon our decks. The vessel was tossed to and fro with such violence that everything which had not been made fast, or was attached to the vessel, began to lurch from side to side. Nevertheless, the invited guests sat down to table, made the seats and the table fast, and, such at least whom the violent rocking did not make sea-sick, partook of a pleasant and joyous meal. But even these precautions did not prevent numerous unpleasant accidents. One tremendous lurch of the ship, which took us unawares, suddenly set adrift a number of our mess, who rolled over and over each other upon that unstable floor, amid a hideous chaos of tumblers, bottles, plates, and crockery. Chairs and *fauteuils* had their legs broken, everything breakable went into irretrievable smash, the *convives* escaping serious injury only by a marvel. Once more they took their seats at table, where only the bare cloth gave promise of security, and endeavoured to anchor themselves more firmly. When, at the conclusion of the meal, our Commodore gave the usual toast, and his guests

emptied their glasses to the health of the reigning monarch, the band attempted to strike up the National Anthem, and a hearty cheer resounded above the groaning of the ship, the howling of the wind, and the sullen roar of the ever-increasing waves, as they lashed against the ship's sides.

The sun went down behind clouds, as we went careering along under close-reefed main-sail and storm stay-sail over a confused sea, running mountains high, and with huge heavy grey masses of cloud and mist close overhead; the barometer was still falling, and as night closed in the wind sung mournfully, yet with almost deafening noise, through the masts and rigging. The wind now shifted and sprung up from N.E. by N., which being an additional sign that the centre of the *cyclone* was receding, we felt assured that we were on the right side to keep clear of it. By midnight the wind came still further round, till it stood steadily at N.E., when it acquired fresh strength, and blew a most violent hurricane. The centre of the *cyclone* had once more altered its course, and begun to move in our direction.

Our position at noon (27° 25′ N. and 125° 23′ E.) was the most unfavourable possible. We had a N.E. wind, and were in the N.E. section of the typhoon, whose centre, as is customary in these storms, was moving in a N.W. or W. direction, and therefore threatened the more readily to overtake us, that our course lay S.E. through the wide channel, which leads from the Chinese Sea into the open ocean

between the Loo-Choo Islands and the Meiaco-sima group. There was now no other egress possible than by steering W. by S. to get away from the advancing centre of the whirlwind, on which course we would have to steer for the N. extremity of the Island of Formosa.

The night of 18th and 19th of August was, in the fullest sense of the word, a night of storms. Towards midnight we once more set double-reefed foresail in order to lie our course of west by south. Had we calculated aright the course of the centre of the *cylone*, the wind as we advanced should have drawn ahead, as we were now keeping it on our larboard beam.

Day-break of the 19th found us beneath a gloomy, angry-looking, cloudy grey canopy on every side, the clouds hanging quite low, till they seemed to brood upon the surface of the sea, now lashed into fury by the violence of the storm. The look-out could scarcely see a cable's length clear of the ship. Deluges of rain, lashes of spray, driven on board by the tremendous violence of the wind, enveloped us in a strange, half-mysterious obscurity. Towards the N.E. a compact bank of bluish grey clouds indicated the centre of the *cyclone*. The motion of the ship was so violent that one of her quarter boats got filled with water, which at every lurch was washed upon the frigate's quarter-deck like a small cascade. Sometimes they became so full that they threatened to wrench the davits from their fastenings. The gun-deck was afloat with spray lashed on board with each pitch of the

ship, while the foam flew high up upon the mast. The waves crossed each other in every direction, huge conical masses rising suddenly to a height of 25 or 30 feet, as far as one might guess, and then as suddenly subsiding. It was the genuine pyramidal sea of the true *cyclone*, of which vessels caught in these furious circular storms are even more apprehensive than the fury and strength of the hurricane.

The wind, which now began to draw to the westward, indicated that thus far we had shaped a proper course, and that the course of the *cyclone* lay towards the N.W. Under these circumstances it was deemed most prudent to make the Marianne Islands, and to avail ourselves even of the hurricane in order to perform a rapid voyage. We accordingly now laid our course to steer S.E. by S., through the centre of the channel south of the Loo-Choo Islands. Considering the width, 120 nautical miles, of this channel, there was reason to hope that, despite the errors in reckoning which were to be expected amid so many manœuvres, and considering the impossibility of getting astronomical observations, and the influence of the sort of currents which those hurricanes usually set in motion for a short period, we might make our way through it in safety.

The wind remained steadily in the N.W., and at first was on our port quarter. Towards noon, however, it came round to N.W. by W., so that we were now running dead before it. We now set double-reefed foresail so as to make quicker progress. Towards 6 P.M. the hurricane woke up to its full

strength; squall followed squall, the universal covering of cloud in which the heavens seemed wrapped looked as though it reached to the very waters, and the air was quite filled with spray, till when standing at the ship's stern it was barely possible to distinguish the forecastle. The storm, sweeping along above the seething water, had a singular piercing, almost metallic, note, quite unlike the singing and whistling made among the sails and cordage. Staggering along under close-reefed fore and main sail, and double-reefed top-sail, the frigate pressed on through the thick night, going 14 miles an hour, through the strait between Loo-Choo and Meiaco-sima, out of the China Sea into the Pacific Ocean, whither she was being hurried along with such impetuous, irresistible violence by the wind, that not even the most experienced seaman could make head against it, but had, when passing from one part of the ship to the other, to warp himself along by means of a rope made fast fore and aft.* At 4 P.M. the barometer stood at its lowest (29°.302, the temperature at the same period being 66°.02 Fahr.), where it remained without sensible alteration for several hours. At last, towards 9 P.M., it began slowly to rise, the surest indication, and therefore most welcome one, that we were increasing our distance from the

* During this storm, we made the not uninteresting observation in a physiological point of view, that when the gale was at its worst, even the least hard-a-weather of us seemed quite free from sea-sickness, apparently the result of extreme excitement. For similar reasons, men who have been bitten by a snake, and who have had raw spirits administered as an antidote, seem able to take four or five times the quantity which they can on ordinary occasions.

central point of the storm. About 11 P.M. the clouds suddenly lifted on S.S.E., the horizon began to widen; there was no longer a doubt that the worst was over.

At dawn on the 20th the masts and cordage showed a thick incrustation of salt, thus giving unmistakable evidence of the great height to which the spray had been driven. The wind was now W.S.W., and the barometer had risen to 29°.5, so that we had now merely an ordinary gale to deal with, and might look upon the *cyclone* as expended. Science had indicated the method of evading the centre of the circular storm, and even of making the very hurricane subservient to our ends in driving us along our destined course!

At 8 A.M. the sun began to be visible by fits and starts, long enough, however, to permit us to make an occasional observation. According to this we were only one mile out of our position by dead-reckoning. During the 24 hours, inclusive of the period during which we lay to, we had run 218 miles in a general direction of S.E. by E. During the afternoon the sky cleared. The sea was still high, but the atmosphere gradually became clearer and more transparent, till by sun-down even the large banks of clouds on the N.E. which continued to mark the centre of the *cyclone* had entirely disappeared. The *Novara* during this tremendous storm had proved herself a thorough sea-boat, nor was there any particular damage noticeable on the occasion of the careful inspection to which her sails, masts, and rigging were subjected, immediately that the weather became more favour-

able. Her masts and sails, which in such a warfare of the elements she might so readily have had carried away, were all found to be uninjured, and only a few plates of her copper sheeting had been loosened by the fury of the waves, while those still clinging to the ship had been rolled up like so much paper, by the tremendous pitching of the good ship. The quarter gallery too, which when the frigate was running before the wind was exposed to considerable danger, had sustained but little damage. Such unfortunately was not the case with a small menagerie of rare birds and monkeys, which had been placed in cages carefully covered with linen in this, ordinarily the most sheltered, part of the vessel. The covering had been torn away by the hurricane, and the wind had so tossed the poor things about, that all their feathers were knocked off, and they presented a most pitiable appearance. The quadrupeds too, whose cries and lowings during the storm had already testified to their misery, were found to have suffered severely. Two oxen and several sheep died on the 19th. All the surviving animals lost flesh terribly during 48 hours, while those that had been the wildest and most untameable were now quite tame and docile.

An analysis of the phenomena observed during the continuation of the *cyclone*, shows that on the 18th it formed its vortex, being then about opposite the rather lofty and tolerable-sized island of Dkinawasmia of the Loo-Choo group, which must have occasioned an alteration in the direction of the wind. Owing in part to the influence of the N.E.

trade, which enters the northern part of the China Sea, and at this season is gradually veering round till it completely displaces the S.W. monsoon, as also during the S.W. monsoon itself, which blows from Formosa on the south, there appears to exist to the northward of the latter-named island, favoured probably by its natural configuration and physical features, a well-defined space within which the barometer is always depressed, and in which the atmosphere in immediate contact with these N.E. and S.W. winds is compelled to assume a sort of whirling motion, like that of the hands of a clock, thus forming the germ as it were of a *cyclone*.

So long as the S.W. wind was blowing strongly, the centre of the *cyclone* moved in an easterly direction, or in other words, in the direction of least resistance. But arrested in its advance by the various island groups, as also by the gradually increasing pressure of the S.E. and E. winds, the *cyclone* must, in consequence of the obstacles opposed to its path, have swung round with a sort of whirl, which once more impressed upon it a N.W. direction to the coasts of China, there to expend itself, apparently in consequence of the ever-increasing pressure of the surrounding atmosphere. During forty-eight hours, namely from 6 P.M. of the 18th to the same hour on the 20th, we were within the range of the typhoon itself, and on the 19th were at the nearest point to its vortex; nevertheless, judging by our lowest barometrical reading, we must have been at least 100 miles distant from the centre. It was the first typhoon that visited Chinese waters in 1858, and had

been predicted weeks before in the "North China Herald," while the Thousand Years Almanac of the Chinese calendar assigned its date for the 10th of August.

Our course was now shaped for the Marianne Archipelago. For several days after the typhoon, the weather remained unsettled, and the swell was both heavy and broken, when on 26th August we came in sight of the island of Guam or Guaham, the most southerly of the Marianne group. In twelve days we had run 1860 miles, with the aid of the typhoon it is true, but there was the fact, the distance had been accomplished, and as to the How? Jack gives himself little concern, so long as he reaches his goal swiftly and in safety.

On the morning of the 27th we stood into the Bay of Umáta; although it was very doubtful whether we should find a secure anchorage here, considering the S.W. wind that was blowing full into the roadstead, which is quite unsheltered in that point of the compass. In fact, as we came nearer the land, we speedily became aware of the impracticability of anchoring here even in the best weather; while, on the other hand, it did not seem very advisable, owing to the difficulty of getting in, to make for the excellent harbour of San Louis de Apra, it being by no means easy, during the prevalence of the S.W. monsoons, for a large ship to beat out, so that they are occasionally detained there for several weeks. The order was accordingly given to luff up, so as to make tacks against the freshening west wind, out of this bay, studded as it is with numerous coral reefs. This proved

to be a work of much time and trouble, ere we succeeded, after many hours of anxious care, in weathering the reef.

The island of Guam, with its lofty green mountain-ridges, numberless valleys, and thickly-wooded glades, had a cheerful and friendly aspect, but seems but little cultivated. At Umáta, where we perceived a few houses, the Spanish flag was waving from a small fort adjoining the settlement, which had been hoisted on the approach of the frigate.

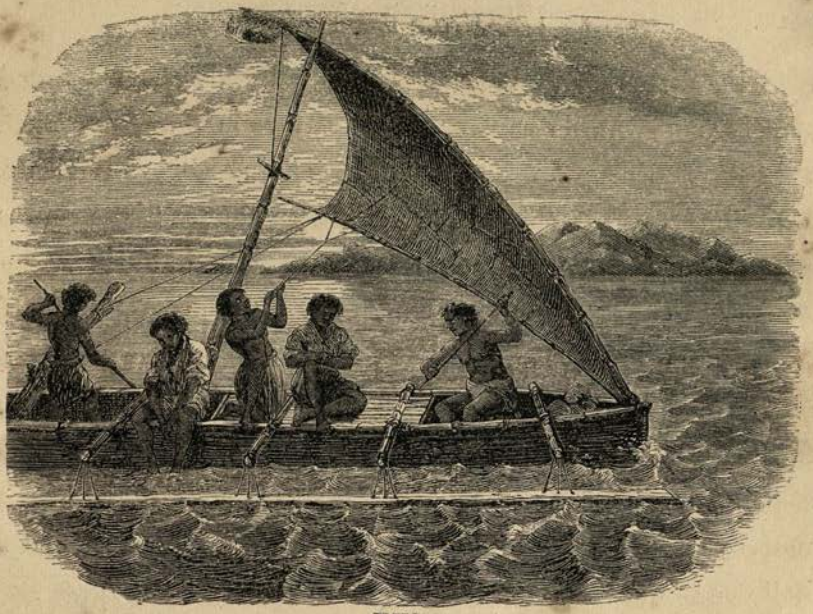
On 30th August, in 149° 53′ E., we reached the eastern limit of the S.W. monsoon, and—although not more than four days' sail from the object of our next visit, the island of Puynipet, had we met with favourable winds to waft us a little further—it was 15th September ere we came in sight of that lovely island, for, stormy and boisterous as the beginning of this section of our cruise had proved, not less annoying were the fickle calms, which kept us lying for weeks motionless, our sails idly flapping with the roll of the ship. It is a wretched depressing state of inactivity and discomfort, of which only those can form an idea who have been caught in a calm on the open ocean, on board of a sailing ship,—

> Wenn Welle ruht und jedes Luft geflüster;
> Wenn Meer und Himmel schweigend sich umschlingen,
> Und fromm, fast wie zwei betende Geschwester."

Which may be freely translated as follows:

> "When ocean smooths his wrinkled face,
> And sea and sky in pray'rful silence bend,
> As when, in mutual fond embrace,
> Two loving sisters' vows on high ascend!"

The original is by Nicolas Lenau.



XVI.

The Island of Puynipet.

18th September, 1858.

Native boats in sight.—A pilot comes on board.—Communications of a white settler.—Another pilot.—Fruitless attempts to tack for the island.—Roankiddi Harbour.—Extreme difficulty in effecting a landing with the boats.—Settlement of Rei.—Dr. Cook.—Stroll through the forest.—Excursions up the Roankiddi River.—American missionaries.—Visit from the king of the Roankiddi tribe.—Kawa as a beverage.—Interior of the royal abode.—The Queen.—Mode of living, habits and customs of the natives.—Their religion and mode of worship.—Their festivals and dances.—Ancient monumental records and their probable origin.—Importance of these in both a historical and geological point of view.—Return on board.—Suspicious conduct of the white settler.—An asylum for contented delinquents.—Under weigh for Australia.—Belt of calms.—Simpson Island.—"It must be a ghost!"—Bradley Reef.—A Comet.—The Salmon Islands.—Rencontre with the natives of Malayta.—In sight of Sikayana.

While yet, on 16th September, 1858, five or six knots distant from the island of Puynipet,* first discovered in

* Occasionally called Bonabe, Bonibet, Funopet (by the French, Ascension). It lies in 6° 58′ N., and 158° 20′ E., and, with the two low atolls adjacent of Andema and Paphenemo (called by the English Ant's Island and Pakeen respectively) were named by their discoverer, Admiral Lütke, the Senjawin group, after the name of his ship.

1828 by the Russian Admiral Lütke, and just as we found ourselves off what is called "Middle Harbour," we remarked a boat of European construction making for the frigate. Two hours later it came alongside, with four natives and a white man, the latter of whom came on deck and offered his services to the Commodore as pilot. He proved to be a Yankee named Alexander Tellet, who had lived 20 years on the island as smith and carpenter, to which he added the functions of pilot for the harbour in which he lived. Presently we were surrounded by a considerable number of natives in elegant canoes streaked with red, and formed of hollowed-out trunks of trees with outriggers, which have very peculiar scaffold-like supports, so that there is a kind of platform formed in the centre of the canoe, whereon the master usually seats himself, but which serves on occasion for festive meetings, and even for a small dance! The sails, made of mats, are triangular, the most acute angle being confined between two long bamboos, while a third serves as a mast, the whole capable of being shifted to either end of the boat by one of the crew, according to the direction of the wind. While some were doing what they could in their small boats to keep within the speed of the frigate, though we were going pretty fast, just as parasites make fast to the shark, others followed us a little distance, like dolphins, those faithful companions of ships, as far as the nearest harbour. With the exception of a short apron of cocoa-palm leaves, the natives were quite naked, and seemed pretty well made. On their heads they wore a sort of projecting pent-

hat, also of palm-leaves, obviously intended to shield the eyes from the vertical rays of the sun, and in form most resembling those lamp shades which old men or youths with weak eyesight are with us in the habit of using to ward off the full glare of artificial light. Among the natives who favoured us with their escort, there were two who from their personal grace, their light colour of skin, and thoroughly European cast of features, especially attracted our attention. They were the sons of an Englishman named Hadley, who had been for many years resident on Mudock island, E. of Puynipet, where he supported himself by fishing and pilotage, and had married a native woman. Shortly before our arrival, Hadley had started with several hundred pounds of tortoiseshell for Hong-kong, whence he intended to sail for England. He had intrusted his two sons to the care of a European settler, who succeeded him as pilot on Mudock island. According to all appearance, however, Hadley had little intention of returning to this island, notwithstanding the family tie that should have bound him to it.

As we were coasting along the west side of the island about 1 to 17 miles from the reefs, Tellet was overwhelmed with questions on every hand and on every possible subject, and among other subjects of information we presently found that the chief intercourse of foreign ships was carried on with Roankiddi or Lee Harbour, some 15 or 20 miles distant, and Metetemai or Foul-weather Harbour, which lies six or seven miles E. of Roankiddi. During the N.E. trade (No-

vember to April), from 50 to 60 American whalers put in to Puynipet to take in wood and water, and fresh provisions, chiefly yams, taro, sweet-potato, poultry, and pigs. Many ships, moreover, bound from Sydney for China prefer at that season the voyage through the Pacific to passing round the south of Australia, and thence through the Straits of Sunda, or the yet more dangerous passage through Torres Straits, and usually make a tolerably fast run. Thus the Swedish corvette *Eugénie*, on her voyage round the globe, performed in November, 1852, the astonishing feat of making the passage from Sydney to Hong-kong, 5000 miles, in the unprecedentedly short space of 37 days!

The number of aborigines on this island, which is about 60 miles in circumference, was estimated by Tellef at about 2000. Formerly it was as many as 5000,* but the small-pox had since then committed fearful ravages among the population. The circumstances under which this frightful scourge was first introduced into Puynipet, throw considerable light upon the history of the spread of that disease, as well as much useful information upon the question of vaccination.

In 1854, the English barque *Delta* arrived at Roankiddi

* Captain Andrew Cheyne, of the English mercantile service, to whom the seafaring world is indebted for a very complete and excellent account of the islands of the West Pacific, and who last visited Puynipet in 1846, reckoned the population of the island at that period at from 7000 to 8000. See a description of islands in the Western Pacific Ocean, North and South of the Equator, with sailing Directions, &c. p. 94. London, J. D. Potter. 1852.—Sailing Directions from New South Wales to China and Japan. Compiled from the most Authentic Sources. By Andrew Cheyne, first Class Master, Mercantile Navy. p. 136. London, J. D. Potter. 1855.

Harbour, with one of her crew ill with small-pox. The white settlers then on the island, who were well acquainted with the virulence of the disease, implored the native chief to forbid the captain's remaining, and insist on his putting to sea forthwith. The latter, however, seemed determined to leave the patient on the island. When he learned the hostile feeling of the population to himself and the crew, and found that they would neither take his sick man off his hands, nor supply himself and ship's company with provisions, he availed himself of the silence and obscurity of night to deposit the sick man on the shore with all his property, and at daybreak made off under full sail. Next morning the natives found the unfortunate wretch stretched suffering and utterly helpless on the strand, while the barque was no longer in sight. Hostility to the captain was now converted into sympathy with, and active compassion for, the sick man; a couch was prepared in an adjacent hut, and as much attention lavished on him as was possible under the circumstances; but his effects, consisting chiefly of linen and upper clothing, were speedily appropriated by the thievish natives. A few weeks later the small-pox broke out with frightful violence, and raged five months with undiminished severity all over the island. Almost every one of the natives was attacked, and of 5000 inhabitants 3000 succumbed to the virulence of the epidemic. The sailor, however, with whom first originated this terrible fatality, completely recovered. His clothing,

scattered through every part of the island, had no doubt essentially contributed to the speedy diffusion of the malady. Of the thirty white settlers, who had all been inoculated, only one was attacked, and he soon got well again. In August, 1854, the destroyer disappeared almost as suddenly as he came, and has since then spared Puynipet a second visit, but wherever one goes the traces of the disease are visible in the faces and on the bodies of the natives.

While picking up this information, we were getting nearer and nearer to Roankiddi Harbour on the S.W. of the island, and Tellet now stated he could not undertake to conduct us further, as there resided a pilot in the harbour whom he was not unwilling to give a job to. Another boat was now approaching the frigate, which had on board the regular pilot of Roankiddi Harbour, a Virginia Negro, named Johnson. Our man Tellet now took his leave, and set out in his boat on his return to Middle Harbour. Many a longing glance did we cast at the spot, where for the first time we were to be privileged to examine the wonders of the coral beds of the South Sea. For Puynipet is one of the finest examples known of a lofty island of the great ocean regularly hemmed in by wall-like reefs, by far the majority of the other islands being mere low "atolls." Unfortunately the breeze was unsteady and very light; the sky looked so gloomy and threatening that we had to haul off again from the island, and steer to the S.E., so as not to approach the reef too closely during the night. In the morning we once

more neared the island, under the influence of a gentle west wind, having run 15 miles out during the night. Gradually the small wooded or rocky islets hove in sight again, which, stretching northward from the great central mass, 2860 feet in height, surround the lofty island like a ring, inside of the wall-reef, which encompasses it at a distance of from one to two miles. We tacked about during the whole day with light variable winds from the west, and by evening had got sufficiently near our anchorage, that every one expected by a last tack to fetch it ere night set in, when the breeze suddenly shifted, died away, and once more compelled us to withdraw to a safe distance from the island, and pass the night under easy sail. At length, on 18th September, a fresh leading wind from the westward promised to carry us in without further delay.

Right in front of us, and with not a cloud to interrupt the view, lay this extinct volcano of an island, densely covered with the most luxuriant verdure. Only at its N.E. corner there sprang suddenly into the air a naked, castellated rock, about 1000 feet high or so, cut off horizontally above, and with perpendicular sides, which we were informed was a small island (Dochokoits), separated by a narrow channel from the main island. Gradually, on either side of the isle, several rocky points became visible, which steadily increased in dimension, and began to stretch towards each other, till they looked like a row of pearls densely sprinkled in the air above the horizon; after which a number of thin, small, white

clouds suddenly rose and disappeared above the dark blue surface of the sea, flickering here and there like flames. This was our first glimpse of the island-reef and the surf-beaten coral, seen under the influence of a mirage, when, as is very frequently the case in tropical climates, the temperature of the surface of the water, and consequently of the immediately adjacent strata of atmosphere, is higher than those next above. Having got within about a couple of miles, the dark points resolved themselves into verdant cocoa-groves, patches of which adorn the outermost reef, while the small clouds now proved to be the tumultuous lash of a tremendous blinding surf, on the reef which separated the rise and fall of the ocean outside from the smooth placid surface of the broad channel, which inside the ring-shaped coral reef forms those singular natural canals, on which the natives in their frail canoes can sail right round the island, sheltered from the violence of the waves, and which, at those places where there is sufficient depth, and a breach in the line of reef admits of ingress from without, affords for even large-sized ships a secure harbour, according to observation in 6° 47′ N., 158° 13′ 3″ E.

We now endeavoured to enter between Nahlap Island on the west, covered with cocoa-palms and bread-fruit, and Sandy Island on the east, surrounded with a belt of raging foam, its coral masses clothed with low scanty brushwood. But almost immediately "Halt" was once more the order. In order to get into the harbour proper, which lay between two majestic banks of coral rising from the level of the sea

like an elegantly hewn dock, we had to pass through a very narrow channel in the reef, barely 50 fathoms wide, which indeed was pretty plainly indicated by the colour of the smooth water, besides being well marked out by regular buoys, but winds in a direction first westerly and then northwards, and accordingly was inaccessible to us with a west wind blowing. There was no alternative but to let the anchor go among the naked coral rocks forming the sub-marine plateau over which we now lay. But anxiety for the safety of the ship did not admit of her being suffered to remain in circumstances so dangerous. While therefore the frigate once more made sail, a survey of the island and harbour was ordered by a boat expedition.

About 9 A.M. the Commodore, accompanied by some of the scientific staff, set off for land in a slim, flat-floored, Venetian gondola, admirably adapted for such purposes. When we had passed the twin Nahlap Islands and Sandy Island, we found ourselves in a channel about 100 fathoms in length by not quite 80 in width, which led directly into the interior of this huge basin constructed exclusively by insects, and surrounded by a triple wall of coral, an unfathomable, mirror-like pool, in which a ship lies calm and motionless as though in a dock. A buoy at the S.W. angle of the channel indicates some sunken rocks. On the further side of the coral reef one perceives the low-lying group of the Ants' Islands, thickly covered with trees. Although our Venetian boat drew hardly any water, we nevertheless found great difficulty in

advancing in proportion as we approached the shore. The fact too that it was ebb-tide served to increase the obstacles that beset our progress. Every moment the gondola touched upon sand-bank or rock. The utmost caution had therefore to be exercised, as we steered for some huts which were visible under the cocoa-palms quite close to the shore. Following the deeper more navigable channels, we reached the mouth of a river running from N.E., the low swampy soil on either side being covered with dense mangrove bushes, but all our efforts to push through the thickets so as to reach the huts proved unavailing, while the whole soil seemed to be beset with the stumps of the mangrove, like so many sharp stakes. After pushing a short distance up this mangrove channel, from which on either side smaller channels diverged, we retraced our steps, as there was no appearance of the scene changing, nor any appearance of human habitation, and endeavoured to reach the land near the huts already mentioned, by some of the deeper channels. Just then a white settler came to our assistance, who, standing on the shore, indicated to us by manual signs the clue out of this labyrinth of coral, and enabled us by a less shallow channel to reach one of the few points at which a landing is practicable. For at almost every point of the shore the mangroves, by the tenacity of their roots, prevent, or at any rate impede, the approach of boats, the natives themselves being confined to the use of those few spots where rivers or other natural channels afford means of access. Close to the shore appeared three wooden

huts thatched with bamboo and palm leaves. This was a small colony of whites, whom a singular freak of destiny seemed to have cast away upon these islands, where they earned their subsistence as wood-cutters, smiths, fishermen, &c. They call their settlement Réi. The first hut we entered was inhabited by a Scotchman, who called himself "Dr. Cook," and practised as a physician. He had lived 26 years on the island. His dwelling consisted of three large apartments, which up to a certain height were shut off from each other by thin wooden walls, so that the air could circulate freely over-head throughout the entire length of the hut. Everything was neat and orderly: in the first room, which apparently was used as a surgery, stood a number of medicine bottles duly labelled, and crucibles, which at the very first glance revealed the avocation of the possessor. Cook, who seemed far past the half century, with pale, faded, expressionless features, and a long silver-grey beard, clothed in a coarse woollen jacket, and with the huge, broad-brimmed, worn-out straw-hat pulled low upon his wrinkled forehead, had quite caught the listless, motionless deportment of the natives. Nothing roused him, nothing surprised him; it took considerable time to elicit from him any reply to our questions. The other white settlers in the adjoining islands were not much more communicative; all showed in their conduct a certain embarrassment, which left little doubt that theirs had not been an altogether blameless life in former days. Most of them were surrounded by a number of native wives, who had covered their bodies with a

powder of an intense yellow, prepared from the *Curcuma longa*, and wore merely a piece of calico round the loins, while splendid yellow blossoms set off the raven blackness of their long hair.

We now followed up a narrow foot-path, which led to a gently sloping eminence behind the huts, and soon found ourselves surrounded by bread-fruit trees and banana, while from time to time a black basaltic rock cropped out from among the red, marl-like soil, and beautiful small lizards with sapphire-blue tails that shone with a metallic lustre, shot about with the velocity of an arrow among the stones. The prevailing formation, as in almost all the volcanic islands of the Pacific, is an amorphous basalt-lava, full of olivin and porphyry. On gaining the summit of the hill, we found there a solitary, wretched-looking hut. A dog, a few hens, and a phlegmatic native worn away to a shadow, whom the sudden appearance of a number of European strangers hardly seemed to rouse from his apathy, were the only living creatures visible. On our requesting to be furnished with a light, a wrinkled old hag crept out of the hut, and handed us a piece of lighted wood. The dusky old woman was presented with a cigar, which she forthwith lit, and proceeded to smoke with unmistakeable satisfaction. To our request for fresh cocoa-nuts with which to quench our thirst, the man, without moving from his place, shouted a few words in the direction of the forest, which was speedily replied to, when some young girls came forth giggling and romping, who brought us what we

had asked for, fresh plucked from the slender cocoa-stem, as well as a sugar-cane, and some ginger (*Zingiber officinalis*); all these refreshments were handed us amid much hilarity by a lot of daughters of Eve, young, not the least shy, but by no means attractive, whom a present of two small mirrors in return sent away in a state of enthusiastic delight. On our return to Dr. Cook's hut on the shore, several natives had approached who bartered mussels and fresh fruit for tobacco, which they preferred to everything, besides a number of young females, who were retailing, from small bags hung round their persons, the different animals they had collected the same morning at ebb-tide among the coral reefs.

One of the white settlers offered his services as guide, to pilot us up the Roankiddi river as far as a village of the natives about two miles inland, where the chief of the nation dwelt, and several American missionaries had formed a settlement. Before reaching the main stream, which is about 100 feet wide and is densely wooded on either side, we had to pass various small branches and canals, which appeared to be artificially constructed, and wind about in a succession of extraordinary meanderings beneath an elastic covering of conical mangrove roots. For about a mile inwards there was nothing but dreary, swampy, unlovely mangrove forest, after which the vegetation on either shore began to assume an unusually variegated but thoroughly tropical appearance. Palms, bread-fruit trees, pandanus trees, papayas, caladias, Barringtonias, were the chief representatives of this abounding forest flora.

The animals on this island seem to be less numerous and less varied; there are no large ones at all. Of doves, as also of sand-pipers and parrots, we saw some very beautiful species, of which the fowling-pieces of our sportsmen furnished numerous specimens for our zoological collection. All along the bank of the river and around the hills lay scattered at will, under the shade of the most beautiful and abundant vegetation, the dwellings of the natives. Near where the pretty Roankiddi falls into the sea, rises on the left bank the handsome mission house built of wood, which serves the missionaries for school, church, and residence in one. Close by is a stone building, which serves as a larder. Unfortunately, the sole missionary, Mr. Sturges of Pennsylvania, was absent on a tour of inspection, and only his assistant (a native of the Sandwich Islands, who had received his education in the States) was at home with his family. A third missionary, also a native of the Sandwich Islands, lives at what is called Foul-weather Harbour, where he also occupies his time with meteorological observations.

The mission, which has been in the island since 1851, is supported at considerable expense. A schooner, the property of the American Missionary Society, keeps up regular communication with the neighbouring islands and the Sandwich Islands, and supplies the missionaries with provisions and other necessaries. These industrious, energetic men have quite recently made experiments in planting several sorts of vegetables, as also tobacco and sugar-cane, nearer their houses, in the hope, if successful, of inciting the

natives to similar exertions. The great resources at the disposal of the Protestant missionaries, and the circumstance that they attend to the temporal as well as the eternal weal of their dusky neophytes, exhausting their medical skill in illness, educating their children, ministering to their wants both by advice and co-operation, must be regarded as the main causes of the rapid spread of Protestantism throughout the races of the Pacific Ocean. We have seen missions, of which the schools, places of worship, and dwelling-houses, constructed of iron, were imported from the United States ready made, while the expenses of maintenance were defrayed by an annual grant of 20,000 dollars. What a gratifying contrast to the wretched appliances with which Catholic over-sea missions are compelled to eke out a precarious existence!

We landed at a spot where the Roankiddi promised to be navigable for vessels of a better class than the hollowed-out canoes of the natives, and for the remainder of the distance to the chief's residence we followed a footpath through the forest. Close to the landing-place is a large, hall-like building, which is used as an assembly-room by the natives on the occasion of their festivities. Around the interior of this are ranged couches stuffed with straw for families of rank, not unlike berths round a ship's cabin. The centre of the hall is set apart for slaves and servants, who during these rude réunions are busily employed preparing food and drink for strangers. As often as a meeting is deemed necessary, invitations are sent off to the various chiefs requesting their co-operation.

On very important occasions these are intoned through a conk. As soon as all are assembled the king lays the subject-matter of the debate before them, when every one present is at liberty to express his opinion. Frequently these discussions become very animated, especially when the orators happen to have partaken too freely of Kawa, when only the interference of the less excited chiefs can prevent the disputants from coming to blows. When we saw it, there were in the hall of justice, as it might be termed, a number of huge, lengthy, but elegant canoes, painted red, which gave it rather the appearance of a shed than a festive hall.

The footpath to the chief's residence led through a most beautiful tropical landscape. The estate of the Nannekin (as the natives designate a king in their own language) was laid out quite in the European fashion, and the entrance was indicated by a wooden gateway. The house itself, a lengthy oblong of wood and cane-work, with a roof of palm-leaves, and built upon a sort of platform of two or three courses of stone, and furnished in every part with numerous large apertures serving as windows, presented from without a very comfortable, even imposing appearance; but the interior was bare, ill-equipped, and sadly out of order. A row of wooden columns, irregularly cut, and partially covered with gay-coloured stuffs, running parallel with the thin exterior walls, formed a narrow passage, a closer view of which was, however, shut off by cotton hangings stretching across. The clothes and other property of the family hung here at

random, suspended from pegs and lines all round the wide hall, and in the middle a hole had been excavated, which apparently was intended for a fire-place. Among the articles of furniture we specially noticed a large iron chest, with iron clampings, and a very singular-looking loom, on which a fabric was being woven in variegated colours. The chief was not at home, and had to be summoned, his timely absence affording an excellent opportunity for examining the environs of the palace a little more closely. In immediate proximity were a number of bread-fruit trees (*Dong-dong*), the fruit of which forms the staple diet of the natives, and has long been prepared by them in quite a unique manner.

The bread-fruit, so soon as it is ripe, is stripped of its husk, and cut into small pieces. These the natives place in pits dug for the purpose about three feet deep, in which they are placed in layers carefully wrapped in banana-leaves so as to prevent moisture reaching them. Thus prepared, the pits are filled up to within a few inches of the surface, covered with leaves, and weighted with heavy stones so distributed as to diffuse an equal pressure throughout. Thus each pit is both air and water tight. After a short time fermentation sets in, till the whole is converted into a substance resembling cheese. The original idea of thus storing the bread-fruit is said, according to tradition, to have been suggested to the natives by a violent hurricane having at a remote period levelled all the bread-fruit trees on the island, thus causing a

great famine. The fruit thus treated continues fit for consumption for years, and, despite its sour taste and nauseous odour when exhumed, it is regarded by the natives as a most palatable and nutritive dish, when well kneaded, placed between two banana leaves, and baked between two hot stones. Besides the bread-fruit, the principal articles of food in use among the natives are cocoa-nuts, sugar-cane, yams, pigeons, turtle, fish, and trepang, the sort of sea cucumber of which we have already given a description, and which the natives eat in the raw state.

They also eat taro (*Caladium esculentum*), a beautiful bulbous-rooted plant of the *Aroidea* tribe, with its broad elegant leaves, which, together with wild ginger and turmeric (which is used sometimes for food, sometimes for anointing the person, or dyeing their dresses) and the plant they call Kawa (*Piper Methysticum*), grow in great profusion on the property of the Nannekin.

As in all the South Sea Islands, the juice of the Kawa is used in Puynipet for distilling an intoxicating beverage, which indeed plays a conspicuous part in all their solemnities. But the mode of preparing it is somewhat better calculated to tempt the palate, since it is not, as elsewhere, first chewed by the women, but rubbed between two large stones, wetted, and then drawn off in cocoa-nut shells. The leading chief is entitled to the first shells of the prepared Kawa, or, if he is not present, the chief priest, who mutters a few prayers over it ere drinking it.

The liquid, as thus procured from this species of pepper, is of a brownish yellow colour, somewhat like that of coffee into which milk has been poured. The taste is sweet and agreeable, producing a glow in the stomach, and induces a sort of intoxication, widely different however from the form that alcoholic inebriations assume with us. Men in the habit of drinking Kawa neither stagger about, nor speak thick and loud, when under its influence. A sort of shiver affects the whole frame, and their gait becomes listless and slow, but they never lose consciousness. In its last stage, the person affected feels an extraordinary weakness in all his joints; headache and an irresistible inclination to go to sleep supervene, and a state of most complete repose becomes an absolute necessity.

The custom of Kawa drinking is diffused over the whole of the islands of the Pacific. It even appears to have become a necessary of life among the natives of Polynesia, just as betel-chewing and palm-wine are to the Malays and Hindoos, opium-smoking and samchoo to the Chinese, chicha to the Mexican races, and coca to the South American Indians.

In former times, on certain of the islands, the chiefs had regular watchers, whose duty it was to guard their monarchs from being disturbed when thus reposing. A dog which dared to bark, a cock that was venturesome enough to crow, were forthwith put to death. The too liberal or long-continued indulgence in Kawa seems to generate a peculiar

cuticular disease. Inveterate Kawa drinkers seem haggard or melancholy, their eyes are sunk, their teeth of a bright yellow, their skin dry and chopped, and the whole body is covered with boils; but those in whom such sores heal up again, point with pride to the cicatrices that mark where they occurred. The more of these scars a Kawa drinker can show, the higher is his character. Besides producing unconsciousness, Kawa also induces exceedingly erotic dreams.

According to the information which the white settlers gave us respecting the method of cultivation of the soil of Puynipet and its climate, it seems that sugar-cane, coffee, cotton, rice, tobacco, &c., would be certain to succeed. Sugar-cane is found even now in the wild state; and to a certain extent it forms an article of food of the natives, who suck the juice.

The chief of Roankiddi is a handsome young man of lofty stature, strong frame, of dark brown almost bronze skin, and agreeable, winning expression. With the exception of the usual apron of palm-leaves, and a bright red belt, he was naked, and wore a green circlet on his fine, lustrous black hair, and a piece of sugar-cane in his right hand. His arms and legs were very neatly tattooed. He seemed quite to understand the use of a red Turkish fez with blue tassel, which we presented to him, and took from his head its own exceedingly picturesque covering. Having been apprized of the friendly nature of our visit, he begged us to

enter his house, which was not so easy a process as it seems, since the only access was by one of the windows, about three feet from the ground. The Nannekin, however, set us the example, and we followed. He first invited us to sit upon European chairs, and ordered his pretty young wife to fetch us cocoa-nut milk. It was the first time we had ever tasted this drink of the natural man in the goblet of civilization! How differently did this invaluable drink taste, when quaffed from the fresh green shell, than in the artificial vessel of human manufacture! The natives of Puynipet did not, like those of Nicobar, show their dexterity in opening the young cocoa-nut by means of a slash. Here the husk is peeled off, and an opening bored with much trouble till the fluid contents gush out—a process so tedious, and manifesting so little ingenuity, that one would rather expect it to be adopted by a European, who for the first time in his life was opening a cocoa-nut, than from a child of the tropics. After the queen had presented with her dainty little hands the cocoa-nut drink to the foreign guests, she squatted herself smiling and laughing on the earth beside the monarch, occasionally hiding herself with much natural grace behind her youthful husband, when she could not restrain a burst of mirth at the interest with which we seemed to regard many of the objects in her simple household. Nothing surprised her more than that we should attach such value to some baskets, plaited work, boxes, &c., as to be willing to exchange articles of European make for them. Like all the

other females we saw, the young queen wore nothing but a piece of yellow linen (*likú*), about five feet long, round her loins, which reached to her knees, and was attached by one extremity to the haunch. Her splendid black hair was adorned with a chaplet of yellow flowers, and her body, smeared with cocoa-nut oil, was plentifully besprinkled with turmeric (called by the natives *Kitschi-néang*). Her legs and forearms were beautifully tattooed.

The gown, or rather apron, worn by the men is made of the fresh leaves of the cocoa-palm, which, bleached and cut into narrow strips, are fastened at the upper end with a string, and then adorned with numerous flaps of red cloth. This gown stretches from the hips to about the knees, and is about two feet long. To be in the fashion at Puynipet, a dandy must wear at least six of these round his body! The ladies of the island stain white calico with turmeric, yellow being apparently the favourite colour of the country. A bright-coloured light handkerchief usually covers the upper part of the body, and they adorn their long beautiful black tresses with the delicate flowers of the cocoa-palm. On high days the ladies wear red clothes hemmed with white calico. Such of the natives, however, as are converted to Christianity, appear in clothes made after the European fashion, although many a part of dress would still have to be remedied, ere a native of Puynipet or his better half would be presentable in a saloon.

Men and women alike are tattooed from the loins to the

ancles, and from the elbows to the wrist. This curious practice is performed on both sexes at from ten to twelve years of age by old women, with whom it is a regular profession. The blue colouring matter used is obtained from the abundant nut-like fruit of the *Aleurites triloba*, which they heat on the fire, and then peel off the hard crust which forms upon it. The operation is performed with the sharp point of a species of pine, or with a pointed instrument* made from fish-bone, which is placed upon the skin, when it is driven in with a slight blow, till the whole design comes out upon the body. Besides the turmeric already mentioned, we saw but one colouring stuff, dyeing red, which seemed to be obtained from *Bixa Orellana*, and is used by the natives to paint their canoes with.

Many of the natives are subject to a very disgusting scaly eruption of the skin (*Ichthyosis*), but do not seem to feel any discomfort from it. Some travellers ascribe this to the immoderate use as an article of diet of raw uncooked fish. It is singular that this malady is found on all the islands near the equator, and was also found by Captain Cheyne among the Pellew Islanders. That shrewd observer once had on board for four months a native of Puynipet as servant, whose whole body was covered with this eruption, but who speedily lost every trace of it as soon as his chief diet was salt meat and vegetables. Beside this cuticular

* The natives of the Engano Islands, to the west of Sumatra, use precisely similar instruments for the same purpose.

malady, the natives are greatly afflicted with scurvy and intermittent fever. Most of their infants too suffer from Yaws* (*Framboesia*), a disgusting eruption, called by the natives "*Keutsch*," which, however, disappears when the child has attained about its third or fourth year. The marks left by this malady when cicatrized might easily be mistaken for those of inoculation.

The Nannekin, although the king of his tribe, nevertheless seemed on the whole to exercise but little influence over his subjects. Thus, for example, we were eye-witnesses of how he vainly attempted to induce two native boys to carry our bananas as far as our place of disembarkation. On the other hand, in all that concerned trading with foreigners he seemed to be thoroughly alive to his own interest. One native who was driving a bargain with us for something, was informed forthwith of the value which the Nannekin assigned to it.

Money is as yet but little used at Puynipet as a medium of exchange, only the whites resident there and the chiefs take a few English and United States coins; and many a native would generally not part for a silver dollar from an object which he will readily give for a piece of chewing tobacco or a common knife. The most useful articles for barter are pieces of bright-coloured calico, red shirts, hatchets, knives,

* Yaws is a very common disease among the lower class of the western and eastern *coast*-population of England. It is unknown almost in Ireland, where the poorer classes rarely eat fish.

axes, straight swords, muskets, ammunition, biscuit, old clothes, and tobacco.*

Of the latter article American Cavendish or negro-head in longish pieces is the most in repute. The Puynipetanese have no special fondness for cigars, nor do they use pipes, but only chew passionately tobacco. As they are unacquainted with the use of the Betel, their teeth are universally beautiful, and of a brilliant white.

There are on the island five tribes, wholly independent of each other,—the Roankiddi, the Metelemia, the Nót, the Tchokoits, and the Awnak, none, however, numbering much above 1500 souls, the most numerous and important being the Roankiddi.

Each king, we are told, has a minister whose power almost rivals his own. Next in rank to the minister are the nobles, who bear the following strange-sounding titles: Talk, Washy, Nane-by, Noatch, Shoe-Shabut, and Groen-wani; after these come such as are not of noble birth, but have earned them through illustrious deeds, and have been rewarded with estates. On the death of the king he is succeeded by whichever of his nobles

* Captain Cheyne adds to the foregoing lists the following articles; fish-hooks, butcher's-knives, chisels, hand-saws, bill-hooks, planes, augers, piles, iron-pots, razors, needles, twine, drills, gay parti-coloured cotton cloths, cotton hose, woollen cloths, trinkets, glass-beads, straw-hats, chests with lock, key, and handles, spirits. The equivalents as laid down by Captain Cheyne are as follows:—

12 hens	=	24	sticks of negro-head	tobacco,	or 4 ells of calico.
100 yams	=	10	„	„	„
100 bread-fruit	=	10	„	„	„
100 cocoa-nuts	=	10	„	„	„
1 cluster of bananas	=	2	„	„	„

has the title of Talk, the others rising one grade. The monarch has the right of freely disposing of his property. As a rule he leaves it to his sons, but if he have none he usually bequeaths it to the next sovereign. Between the monarch and his courtiers some quaint patriarchal customs prevail. Thus the first ripe bread-fruit is brought to the king. Whenever a chief uses a new turtle or fish net, the prey during a certain number of days is sent to the king. Another mark of the respect paid to the king, as also by all ranks to their superiors, is to be found in the custom for a native who meets another of higher rank in a canoe,—he cowers down in his own boat till the other has passed by, the two canoes approaching on the side opposite the outrigger, so that the person of superior condition may, if he see fit, satisfy himself of the identity of the other.

The Awnaks and Tchokoits had, at the period of our visit, been at war with each other for six months, and it is significant of the ferocity and courage of both parties, that not a single combatant had thus far been wounded on either side! Their weapons are chiefly spears of hard wood, six feet long, the barb, instead of iron, being made of fish-bones, thorns, or ground mussel-shells, which they throw with great dexterity; also hatchets, long knives, and old muskets, obtained from the whale-fishers in return for yams and tortoiseshell. At present there are about 1500 muskets in all on the island, and each native possesses at least one, some of the chiefs having as many as three, besides ample ammunition. Singular to say, these

formidable auxiliaries are rarely called into play in any of their wars, the fatal effect of fire-arms having contributed not a little to the promotion of harmony and peace between the various tribes! Their warriors are selected from among the most powerful men of the tribe, and as a rule they behave with much consideration to the women and children, whom they almost always spare. When either party sues for peace, a neutral party is sent to the monarch of the opposite tribe with a few Kawa roots. If these are accepted, the struggle is considered over, and a succession of friendly visits are thereupon exchanged between the chiefs of the two tribes, which are usually followed up by festivities and much consumption of Kawa.

As to the narratives of most earlier travellers that the island is inhabited by two entirely distinct races, the one yellow the other black, we could neither see nor hear of anything which would confirm such a statement. It seemed more probable that the diversity of skin and hair among the various tribes was exclusively caused by a variety of crosses, which are still frequent, and in former times must have been still more prevalent. The present population consists of whites, negroes, and yellow-coloured aborigines, who, as speaking a dialect allied to that of Polynesia, seem to belong to the Malay-Polynesian *stirps*. The present white settlers are English and North Americans; formerly they were chiefly Spanish and Portuguese who traded with the natives. Negro slaves and free blacks have also occasionally visited the island,

or been left there for good and all. These considerations alone suffice to explain certain appearances among the natives, such as brown or yellow skins, with crisp woolly hair, and very full lips, without any more marked characteristics of the Ethiopian race. We noticed one native with woolly hair of a reddish hue, but otherwise of strongly marked Malay features, and on inquiring into his ancestry, were informed in reply that his father was a Portuguese (negro understood), and his mother a native.

The daughter of Doctor Cook, the Scotchman already mentioned, of whose union with a native woman of the island there was issue a handsome well-shaped *mestiza* of a light yellow colour, strongly recalling the stately, elegant quadroons of New Orleans and St. Domingo, had intermarried with a full-blooded negro of the district of Columbia, U. S., from which resulted a new and entirely dissimilar admixture. Their children had the face of the mother, with the woolly head of the father.

At all events it may be laid down with some degree of certainty, that the aboriginal races, especially those inhabiting the Caroline Archipelago, are not of the Pelagian Mongols, nor are they an offshoot of the Mongolian race of the Asiatic continent, as Lesson maintained; also that Puynipet has not been peopled by the Papuan negroes; that the woolly crisp hair of so many of its inhabitants is mainly explained by the intimacy between the black crews of the whalers (it being well-known that a large proportion of the crews of the American

whalers are negroes), some 50 or 60 of which visit the island every year, and often remain for several weeks taking in provisions and other stores.

Puynipet has been for some years past the chief rendezvous of the whalers in the Caroline Archipelago, because it is of all the islands the most accessible, has the best and safest harbours, and because fuel and water are procurable thence in unlimited quantities.

The complexion of the natives is of a clear copper hue, and the average height of the males is 5 feet 8 in.; the women are much smaller than the men, with delicate features and flexible forms. The sons of the chiefs are usually well formed, and lighter in colour than the majority of the population, the consequence of their being less exposed to the weather, and in any part of the world would pass for elegant men. The nose is arched, the mouth wide with full lips and dazzling teeth. The flap of the ear is bored in both sexes, but is rarely much enlarged by artificial means. Both men and women have beautiful black hair, which they take great care of.

The men have neither beard nor mustachios. They eradicate the hair so soon as it makes its appearance on the cheeks by means of mussel-shells, or two little pieces of tortoise-shell sharpened. The women are usually pretty, but as the girls marry very young they soon lose the freshness of youth. Their complexion is much fairer than that of the men. The cause of this is to be found in their wearing a sort of upper

robe of calico; a large piece of stuff with a hole in the centre through which to put the head, which thus protects their bodies somewhat from the direct rays of the sun.

The natives are said to be very temperate and methodical in their habits of life. They rise at daybreak, bathe in the river, take a little vegetable food, anoint their bodies with cocoa-nut oil, after which they sprinkle themselves plentifully with powdered turmeric. This done, they address themselves to some simple avocation, which they prosecute till noon, when they once more withdraw to their huts, bathe, and partake of another equally frugal repast. The rest of the day is spent in amusements and mutual visiting. Towards sunset they take a third meal, and as they have neither torches nor artificial light of any sort, they usually retire early to rest, unless fishing or dancing by moonlight.

Much respect and consideration is paid to the weaker sex throughout the island; they not being put to any work which does not come within their regular sphere of duty. All out-door work is done by the men, who build the huts and canoes, plant yams and Kawa, fish, transport the food from the plantation to the house, and even cook it.

The women are chiefly occupied within-doors, in fishing, or cleaning the vegetables, most of their time being taken up with preparing head-dresses, weaving girdles, sewing together palm or pandanus leaves for clothes, plaiting elegant baskets, and looking after the house and children.

Never at any time patterns of virtue and chastity, the im-

portation of European trinkets and luxuries of all sorts has greatly increased the spread of immorality among the native women, who are actuated by an insatiate, irresistible craving to possess articles of European manufacture.

When a native wishes to marry, he makes a present to the father of the girl he wishes to marry; if not returned, it is understood his addresses are accepted. Thereupon invitations are issued to a merry-making, with feast, and dance, and revel, after which the bridegroom conducts his bride to his dwelling. When she dies the widower marries her sister, the brother in like manner being required to marry his widowed sister-in-law in the case of the death of the husband, even though he may happen to be already married. Under certain circumstances a man is at liberty to divorce his wife and take another; a woman, on the other hand, enjoys no such privilege, unless she happen to be of higher rank. The chiefs usually have several wives, polygamy, as among the Mormons, being only limited by the means of providing subsistence. The women are of an unusually gossiping, talkative turn, they are quite incapable of keeping their own secrets, and many a delinquency is generally known at the very moment of its commission.

The funeral ceremonies seem to have undergone some modification since the natives began to have intercourse with Europeans. In former times the dead were enveloped in straw mats, and kept for a considerable time in the huts: through the influence of the missionaries, apparently, they

have adopted the European custom of interring their dead in certain special places. On the death of a chief or any exalted person, the female relatives of the deceased assemble to mourn for a specific period, and betray their sorrow by loud sobs and lamentations by day and dances by night. The connections of the deceased cut off their hair as a mark of their sorrow. All the goods and clothes of the defunct are carried away by whoever is nearest or first possesses himself of them, and this custom is so universal that objects thus obtained are thenceforth considered as lawful property.

The natives usually pray to the spirits of their departed chiefs, whom they implore to grant them success in fishing, rich harvests in bread-fruit and yams, the arrival of numerous foreign ships with beautiful articles for barter, and a variety of similar matters. The priests of their idols profess to be able to read the future, and the natives place the most implicit confidence in these predictions. They believe that the priest is inspired with the spirit of a deceased chief, and that every word they utter when in this excited state is dictated by the departed. When any of these prophecies fail, as is often enough the case, the cunning priest pretends that another more powerful spirit has interfered, and forcibly prevented the accomplishment of what they had foretold.

The religion of this primitive people is very simple. They have neither idols nor temple, and although they believe in a future state after death, they seem to have no religious customs or festivals of any sort. Their notion of a future

state is under such circumstances exceedingly extraordinary.

Their abode after death they believe to be surrounded by a colossal wall amid a fathomless abyss, in fact a sort of fortress. The only portal into this Elysian abode is guarded by an old woman, whose duty it is to hurl back into the yawning deep the shadows of the departed, who are compelled to spring upwards from the abyss. Such of the shadows as succeed in eluding the evil spirit and effecting an entrance are for ever happy; on the other hand, those whom the malicious female demon succeeds in precipitating into the abyss sink into the region of endless woe and torture.

The native festivals, as a rule, take precedence of every other business, no matter how pressing. Every year the king visits the various villages and settlements of those of his tribe, at which period the chief festivities take place, the chiefs vieing with each other in entertaining him. Enormous quantities of yam and bread-fruit are on such occasions cooked two days previous, and Kawa is drunk to excess.

Their dances are far from unbecoming, and are quite free from those lascivious gestures which are so often seen at the festivals of the other inhabitants of the South Sea. The dancers are usually unmarried lads and girls, who stand opposite each other in long rows. While keeping time with their feet to the music, they accompany the dance with graceful motions of the arms and upper part of the body.

Occasionally they throw their arms out, snap their fingers, and then clap the hands together. Every movement is performed with extraordinary precision, and at the same moment by all the dancers. Their sole musical instrument is a small flute made of bamboo-cane, the notes of which they draw forth by inserting one end in the nostril and blowing gently, while their hands are busy fingering the holes in the usual way.

Their drum is a piece of hollowed-out wood with the skin of a shark stretched over it, of the shape of a sand-glass. This is struck with the fingers of the right hand, the instrument being hung on the left side. The sound somewhat resembles the Tom-tom of the Hindoos. The drummer sits cross-legged on the ground, and accompanies the beat of the drum with apposite words.

As to the monumental ruins of the interior of Puynipet which have never yet been visited and described by scientific travellers, we were informed that they consisted of nothing more than a large number of colossal rough-hewn blocks of basalt in the heart of the forest, near Metelenia harbour. The simplicity of the native, in the absence of all means of accounting for them naturally, sees in these the grand forms of the spirits of departed chiefs. Experienced travellers, on the other hand, are of opinion that in this primeval forest, where now only rocky débris lie scattered about, there once stood strong fortifications, such as indeed no savage people could have erected, and that the character of the ruins evidences a

high state of civilization in those who erected them. Some of the blocks are 8 or 10 feet long, hexagonal, and must evidently have been brought from some other country, since, with the exception of these, there are no other stones of a similar description found in any part of the island. Streets are laid out at various points, and the whole settlement seems to have consisted of a range of strongly fortified dwellings.*

These columns and blocks, however, possess a special interest not merely in the history of civilization, but of geology, as a part is at present under water, and can only be reached in canoes, a difficulty which cannot have been in existence at the period of their erection. What once were streets are now passages for canoes, and were the walls, built of massive basalt blocks, to be pulled up, the water would obtain access to the inclosed space. This has induced later geologists to refer this phenomenon to a sinking of the entire group, so that Puynipet is perhaps the only spot on the earth where Darwin's ingenious theory of the construction of perpendicular reefs and atolls being the result of a sinking of the soil on which the coral-animal had begun to erect his edifice, receives confirmation from the existence of the remains of man's handiwork within the historic period.

As even the "oldest inhabitants" could give us not the slightest information as to these ruins, and their origin and

* Similar ruins are described by Captain Cheyne as having been also found in the forests of Nálan (Strong Island) in the Caroline Archipelago, 5° 21′ 30″ N., 163° 0′ 42″ E.

history are plunged in the utmost obscurity, it seems not improbable that these stone masses were once the fortified retreat of pirates, and were built by Spanish corsairs 200 or 300 years back. This hypothesis receives confirmation in the fact that in 1838 or 1840, a small brass cannon was found on a hill in the interior, which was brought home as a curiosity by H. M. S. *Larne*. Occasionally, too, at various parts of the island clearings are found, some of which are several acres in extent. In one of these, still in existence near the harbour of Roankiddi, the traveller is shown an artificial mound of about 20 feet wide, 8 feet high, and a quarter of a mile long, which has obviously been thrown up as a defence, or else has been the place of interment for such as have fallen in a severe contest.

This conjecture adopted, it follows that the present population is of quite recent introduction, and the rumour of a black race inhabiting the interior must necessarily be treated as a myth.

While we were asking questions and getting up information, evening was beginning to draw on, and we could not remain longer on the island, as it was necessary to return on shipboard before nightfall, the frigate having meanwhile been kept cruising under easy sail, about three or four miles off the island. Another reason for our immediate departure was to be found in our narrow flat-bottomed craft, which in any sort of sea-way would have some difficulty in escaping swamping. Had the wind during our return voyage fresh-

ened ever so little, we should have found ourselves in a serious dilemma. Numbers of herons, white, black, and mottled, were fishing in the shallow water along the edge of the reefs, the sea-raven flew in vast flights among the lagoons, while high overhead the graceful frigate-bird swept along, every now and then darting rapidly down to secure his booty.

One of the whites whom we employed as our guide in the island, accompanied us on board, and asked as his reward some tobacco and clothes, with which he departed much satisfied. In him, too, we observed a marked and quite peculiar shyness, especially when on board the frigate. He seemed as though he dreaded some avenging hand. His glance was timid, his gait and motions betrayed a sense of insecurity, and he might have readily been mistaken for some repentant sinner, who in consequence of some evil deed had fled from civilized society and sought out this distant asylum, where he had scarcely to fear any other persecution than that of his own conscience! Hardly any spot, indeed, can be named more suitable for thus expiating crime than this remote island, where the white man, face to face with nature in a new and unwonted aspect, and at the mercy of a savage people, often deprived for months of the consolations and support of civilization, finds in his solitude ample opportunity to reflect upon the enormity of his guilt, and to mourn over his own evil fortune.

As the west wind, which still blew, effectually prevented

the frigate from entering the harbour of Roankiddi, and there was no reason to hope for any speedy change, our original intention of spending several days there was abandoned, and the same evening we resumed our course for Australia.

As our brief stay of barely five hours on the island of Puynipet necessarily led to our observations and remarks being of the most superficial nature, whereas the island has of late years begun to acquire an unusual importance both in a maritime and a commercial sense, we must content ourselves with referring the reader for a more detailed account to Captain Cheyne's admirable and comprehensive account of the island.

"The Ant Islands (called also Fraser's Islands) lie in a S.W. direction from the harbour of Roankiddi, from which they are about 12 nautical miles distant.

"They consist of a group of low coral islets covered with cocoa-palms and bread-fruit trees, and surrounded by a coral reef, which makes a lagoon in the centre. Between the two longer islands at the east end of the group there is a channel. The entire group from N.W. to S.E. measures seven miles in width, is only inhabited from May to September, during the period when the cuttle-fish are caught, and is the property of the chief of the Roankiddi tribe. However the islands are frequented at all seasons by the natives of Puynipet, who procure here cocoa-nuts and bread-fruit. The most north-easterly point lies in 6° 42′ N., 158° 3′ E.

"Next the Ant Island is Pakeen, the sole adjoining island. It lies about 22 miles W. of Tschokoits, its central point lying in 7° 10′ N. and 157° 43′ E. It consists of five small coral islets, completely inclosed in a reef, which forms an inaccessible lagoon in the interior.

"The entire group is about five miles in length from west to east, and from north to south three miles in width. The islands are very low, but produce an enormous quantity of cocoa-nuts and bread-fruit, while the lagoon abounds with excellent fish. The westernmost island is inhabited by about thirty persons in all, mainly of the family and attendants of the Chief of Puynipet, who claims proprietorship of the whole group. This scanty population is chiefly engaged in the construction of mats and canoe-sails made of the leaves of the *pandanus*. In fine weather the denizens of Pakeen are fond of running over to Puynipet to exchange their own products for tobacco and other foreign articles.

"What are marked on the charts as Bottomless Group and St. Augustine's Islands have no existence. Pakeen and Ant's Islands are the same groups adjoining each other to the westward of Puynipet."

Our progress now began to be very slow, and the equatorial zones with their vexatious calms, and variable light breezes alternating with violent squalls, became a sore trial for our patience. An unusual and most oppressive heat, from which we vainly sought shelter; tropical rains, which often fell in unbroken torrents for hours at a time, and obscured the day-

light with clouds almost as suddenly at times as though there were an eclipse; a long heavy swell, which knocked the good ship about with an unceasing and most disagreeable motion, without nevertheless our being able to advance one single mile in the twenty-four hours; the depressing monotonous flapping and filling of the sails, which, with the rolling and pitching of the ship, now bellied out and then fell idly back against the masts and yards, straining the rigging and cordage, and keeping a constant indescribable but most irritating noise—such is a faint sketch of the miseries of voyagers caught by an equatorial calm in a sailing vessel! How one longs for a good hearty storm, if only to drive us out of this truly dismal plight! How in the monotony of such an existence does a quite insignificant circumstance at once assume the proportions of an important event! The most trifling incident on board, the most imperceptible object which becomes visible in either atmosphere or water, attracts universal attention, and gives rise to discussions by the hour. One day some one perceived a dark object floating in the distance; when the frigate got near this proved to be the trunk of a tree, almost 100 feet long, and though at best we could only have used it as firewood, a boat was forthwith manned and dispatched to tow it along-side. A few black Albatrosses suffered themselves to be hauled contentedly along upon the floating trunk, somewhat astonishing us by their being found so near the equator. Only by dint of considerable exertion was the

huge unwieldy piece of wood brought on board, when the zoologists got a famous lesson in conchology, from the shell-fish that had fastened on it, and the sailors chuckled with delight at finding some occupation in cutting up the vegetable colossus into sizeable pieces.

At 6.30 P.M. on the 29th Sept., we crossed the equator for the sixth time in 161° 57′ E., and in the Southern hemisphere found we still had to contend with calms and contrary winds.

> "To-morrow, and to-morrow, and to-morrow,
> Crept in this petty pace from day to day,"

without our making any perceptible progress. When we had reached 4° 15′ S., and 160° 24′ E., a circumstance occurred to break the uniformity of our existence, as according to the charts we were using of the Hydrographic Institute of England for the year 1856,* we must have been quite close to some coral-reefs, known as Simpson's Island. But although by our observations, after due allowance made for currents, we were, about 4 P.M. of the 5th October, off the N.W. extremity of the islands, there was no land of any sort visible on either side even from the royals, and we accordingly had to conjecture that Captain Simpson, after whom these islands were named, must have sighted one of the Le Maire or Tasman group, which lie 40 miles further to the west and 10 miles further to the north, and had, owing to

* From 1st October, 1856, upon which were marked all the improvements known up to 1857.

false reckoning, imagined to have discovered a new cluster; for on the following day at 6 P.M., when by our course, which was south-easterly, the island ought to have lain W.N.W. ten miles distant, not a vestige of land could be descried from the deck, nor even from the mast-head, so that we felt positive the Simpson group were neither at the spot laid in the general chart of the English Admiralty, nor within ten miles of it in either an easterly or westerly direction.*

A few days after this interlude, an incident of a very peculiar character took place, which excited universal attention, and more especially greatly exercised the souls of the superstitious. The occasion was nothing less than a dread whisper that there was a ghost on board. From time to time, in fact, dull rumbling sounds were said to be audible, which some professed to hear above them, others below, some in the fore part of the ship, others aft. It was a noise like the roll of thunder, or of cannon-balls that had got loose. The shot-racks were carefully examined, but everything there appeared to be in its usual order. The sound was repeated the following days, when there was hanging over us a sky as black and murky, accompanied by heavy pelts of rain,

* Compare Captain Cheyne's sailing directions, p. 68: "Captain Simpson of Sydney reported to me in 1845, that a group of low coral islands, covered with cocoa-nut trees and inhabited, had been seen in 4° 52′ S., and 160° 12′ E. This may probably be the same group seen by Captain Wellings in 1824, which is laid down in Mr. Arrowsmith's chart in latitude 4° 29′ S., 159° 28′ E." It is matter of surprise in any case that considering the uncertainty which prevails as to the precise locality of the reef, its position on the English Admiralty Charts should not at least be marked *doubtful.*

as though all the clouds of heaven were lavishing their contents upon us. All on board indulged in every possible hypothesis that could explain these sounds, and exhausted themselves in conjectures. Some maintained that one of the volcanoes of the Solomon group, in the vicinity of which we were at the time, was in a state of activity, and was the cause of these submarine thunders; but the sailors, sailor-like, insisted it was ghosts playing pranks, and the attendants refused any longer to remain in the cock-pit, alleging it was haunted! However, when a second examination was made of the shot-racks, it was found that no fewer than eighty thirty-pound iron shots had broken through the wooden bulk-head of the ordnance room, whence they had made their way into the bread-dépôt, as it was called, and on its metal floor had produced the resonance peculiar to the impact of metal against metal. The mystery was at once solved in the most natural manner, and the "each-particular-hair-on-end" ghost stories which during the last few days had been flying from mouth to mouth, forthwith dropped. Thus might many a "marvel" prove to be the result of some very ordinary cause, if people would but take the trouble to examine its natural causes, instead of ascribing everything which they cannot understand or explain to some supernatural influence.

At noon of the 7th October, in 6° 37′ S., 161° 8′ E., we were, according to chart, 12 miles distant from Bradley's Reef. But although both seamen and midshipmen were

stationed at the mast-heads, in order the more readily to make it out with the advantage of such an elevation, there was not the slightest trace perceptible of rocks or shoals, and we sailed without obstruction over the very spot at which, according to the English charts, Bradley's Reef rises from the waves. This reef was discovered by Captain Hunter in May, 1791, two days after he had passed Stewart's Island (Sikayana), and is doubly dangerous in a climate where the sea rarely runs so high as to make it easily observed by the surf breaking over it. According to our observations, collated with those of Captain Cheyne, Bradley's Reef must lie in about 160° 48′ E.*

The same day about 7 P.M., when we were about 120 miles distant from the N.W. part of the Solomon group, there suddenly and altogether unexpectedly blazed forth in the western sky an immense and most brilliant comet, with a yellow, rather bright nucleus, and an enormous tail, sweeping over some 15° or 20°. It was about 8° or 10° above the horizon when we observed it.

This rare phenomenon, during the fourteen days it continued visible, presented a most excellent opportunity for astronomical observations. Upon the sailors, usually so superstitious, this splendid celestial visitor made a much less profound impression than we had anticipated. But few were apprehensive that the end of the world was at hand, while

* A. Cheyne—Sailing Directions from New South Wales to China and Japan. London, 1855, page 68.

the majority seemed quietly to indulge the pleasing anticipation that the wine of the present year would be good and plentiful.

At last, on the 8th of October, we sighted the Solomon Islands. Some reefs which were said to lie a little to the north, adjoining Ontong-Java, we looked for in vain in the positions assigned them on the charts. On the other hand we could see the lofty, forest-covered Carteret Island directly before us. Gower Island lay nearly due west, about four miles distant. This flat low island, which also is not quite accurately laid down on the English chart, appears to be about eight miles long, the highest point of its ridge not exceeding 180 feet above the sea. Its S.E. and N.W. points, upon which beats a furious surf, extend a full half mile into the sea. We could nowhere perceive any huts of natives. Nevertheless it is highly probable, if the island is inhabited at all, that the population would have settled on the W. side, which is more sheltered against wind and weather.

From the hills on Carteret Island smoke was issuing at different points, but the natives did not put off in their boats, although on the afternoon of 8th October the frigate was becalmed off the land. When it was found that in consequence of the violence of the S.E. winds, which alternated with calms and N.E. squalls accompanied by rain, it would be impossible for us to pass through "Indispensable Straits," fringed as they are with coral reefs, it was resolved to range along the N.E. side of the entire chain of islands,

so as to fetch the open passage between San Christoval (the most south-easterly of the Solomon Islands) and the Nitendi group. We thus had to beat with much difficulty against a S.E. wind and a strong current, so that we barely made 15 miles a day.

On the 13th October, towards evening, we found ourselves about opposite the large mountainous island of Malaýta. This island presents fine richly-wooded mountain scenery, but without any traces of volcanic contours. The natives do not appear to dwell near the shore, but among the hills we could observe cleared spots and huts. Curiously enough the highest peak of the island, 3900 feet high, is named Kolowrat, a renowned Austrian name, although it could hardly have been an Austrian navigator who gave it to this mountain. Many others of these islands, however; have German names, though the majority indicate their discovery by the French navigators, Bougainville, Senville, and Dumont d'Urville, to whom the seafaring world are indebted for their first acquaintance with this interesting group. During the afternoon a heavy blow came on from the S.S.E., upon which we put about and steered E. by S., but had hardly made the alteration, ere it came on to blow from N.N.E., with such fearful violence that the cross-jack-yard, which was already sprung, broke in two, and the sheet of the main try-sail gave way. It was the heaviest squall we encountered during the voyage. Fortunately the cross-jack-yard had as a precaution been firmly lashed, so that the two ends continued to hang

in the air. Consequently what might have been a serious calamity was avoided, and the result of the accident was confined to the difficult task of disengaging the unwieldy shattered yard. Towards evening a heavy rain fell, and the wind went down. In the course of the profoundly calm night which followed, the current swept us so close in shore, that by morning we were not more than two or three miles distant. A few small boats with natives were about, which endeavoured to approach us, but only one of their number succeeded. These boats were not ordinary canoes, but regularly decked and deep-waisted boats, with high stem and stern, not unlike the boats in use at the Island of Madeira.

The one which came alongside was manned by five brownish-black men, perfectly naked, with thick crisp hair resembling a wig, which seemed to be stained red with ochre. By way of special adornment, some wore in their side hair a yellowish-red tuft, something like a tassel, and apparently made of strips of stained bast. One wore a wild boar's tooth in the tip of the ear, two others had small cylinders neatly carved out of mussel-shells passed through the nostrils, as well as rings of the same material around the upper arm and below the knee. When the boat had got within about a pistol shot from us, one of the natives rose, and in clear strong tones shouted to us some unintelligible words, while at the same time he pointed towards the land with very eager, energetic gestures. He seemed desirous of

inviting us to come on shore and visit the islands. At the close of his address there arose those peculiar reverberating shouts, such as one would have expected rather to hear among the Styrian Alps than from a Papuan of the Solomon Islands! Upon this the rest of his companions rose likewise, and waving in their long arms a piece of tortoise-shell, they kept shrieking Matté-Matté! for an indefinite period. Not one of them knew a single word of English, nor could we make ourselves intelligible even with a vocabulary of the dialects used in the adjoining islands. Although distant in a direct line N.W. only 60 miles from Stewart's Island and its inhabitants, they spoke an entirely different idiom, and were likewise distinguished widely from any of the latter in colour, make, and physiognomy. Notwithstanding a repeated and pressing invitation to come on board, they could not be induced to mount the frigate's side, even by the most tempting promises, nor even by presents of linen-stuffs, tobacco, articles of clothing, &c. They seemed to have had but little intercourse with vessels. At length, on our repeated signs, they slowly and shyly came so near that we could throw a rope on board. The most courageous of their number planted his foot on the side rope, but made no attempt to proceed one step further. But we were by this means at all events able to examine these singular beings more closely. They all had oval faces, and broad, flat, long noses. Two were full-grown men, of tall powerful frame, while the rest seemed not above from fourteen to sixteen

years old. None of them were tattooed, but the practice of anointing the body and the want of cleanliness left many coloured marks upon the skin. One of the lads had a sort of scaly eruption all over his skin. Beyond the pieces of tortoise-shell already mentioned, and the ornaments they wore upon their bodies, they had absolutely nothing in their boats, not even fruit or other natural products. They rowed a considerable distance after empty bottles which were pitched into the sea, and one of them seemed to attach such importance to the possession of these, that he plunged into the water to swim after them, and thus secure them the more readily.

Unfortunately our intercourse with these islanders of the Solomon group was confined to the little episode above related, and as a favourable breeze once more sprang up, we soon lost sight of these simple savages and their island. On this occasion the members of the Expedition were unanimously of opinion (which is not always the case in matters of personal impressions), that the inhabitants of Malaýta were the wildest, most uncivilized race of men we had as yet encountered in our voyaging to and fro round the globe.

During the night numerous watch-fires were visible on the peaks of the island. Were they lit for the protection of the slumbering inhabitants against the cold and damp of the night, or were they alarm signals for the entire population of the island, warning them against dangers that menaced them? If any apprehensions were entertained by the natives of Malaýta

that we had visited their shores with hostile intent, they must have been of short duration, for the same wind which prevented our making Port Adam, wafted us the following morning — it was the 16th October, 1858 — in sight of Sikayana.

XVII.

The Coral Island of Sikayana.

17th October, 1858.

Natives on board.—Good prospects of fresh provisions.—An interment on board.—A night scene.—Visit to the Island Group.—Fáole.—Voyage trip to Sikayana.—Narrative of an English sailor.—Cruelty of merchantmen in the South Sea Islands.—Tradition as to the origin of the inhabitants of Sikayana.—A king.—Barter.—Religion of the natives.—Trepang.—Method of preparing this sea-slug for the Chinese market.—Dictionary of the native language.—Under sail—Ile de Contrariété.—Stormy weather.—Spring a leak.—Bampton Reef.—Smoky Cape.—Arrival in Port Jackson, the harbour of Sydney.

The short distance at which we found ourselves from Sikayana, called Stewart's Island by the English, as also the prospect of procuring there fresh provisions for the crew, among whom after 66 days' confinement on board ship, some symptoms of scurvy began to appear, determined our Commodore on spending a day there, and effecting a landing. Towards afternoon, when we were about four or five miles dis-

tant from the western island, two splendid large canoes approached the ship, in which were fifteen men stark naked, except for a piece of linen round their loins. They were all tall, robust, powerful men, five and a half to six feet high, some with long, others broad faces, all having long noses, of a light brown colour, and the greater number with glossy black hair. With the exception of one who had whiskers, they were beardless; almost all being tattooed from the elbow to the shoulder. They spoke broken English, and even had English names. We never saw among the savage races such finely built, well-proportioned, healthy-looking men, as these inhabitants of the coral reef of Sikayana. Their free, unaccustomed, familiar deportment was something surprising. But our astonishment reached its height when one of these apparently savage children of nature, happening to find on a table on the gun-deck a draught-board lying open, immediately challenged one of the by-standers to a game, which it seems he understood so well that he beat his antagonist two games out of three. We afterwards heard that the natives at Sikayana have learned draughts, as also an English game at cards known as "odd fourth," of which they seemed passionately fond, from some English sailors, who several years before had spent five months on these islands, preparing Trepang, or *biche-de-mar*, for the Chinese market, those sea-slugs having formerly been found here in large quantities.

To our question whether they had fresh provisions for sale, and of what description, they replied that they possess on

the island plenty of Taro, cocoa-nuts, bananas, pigs, and poultry, which they would willingly exchange for fish-hooks, tobacco, calico, gunpowder, ammunition, biscuit, playing-cards, and ornaments for their wives. For money they did not show the slightest desire, and of the value of gold they seemed to be utterly ignorant. They showed the utmost eagerness for playing-cards and trinkets.

We now also learned that there was on the island one white settler, an English sailor. This man attempted to come off to the frigate in a small canoe, but owing to night setting in, he could not reach her. As these hearty people were taking their leave, we promised to pay them a visit early next morning, with which they seemed highly delighted.

There still remained the same evening one mournful duty for those on board the *Novara*. During the afternoon one of our sailors had died after protracted sufferings consequent on dysentery, and we had now, for sanitary reasons, to commit his remains to the deep the very evening of his death. It was already dark when the officers and crew were mustered on deck, to pay the last honours to the departed. The captain gave the customary orders, the ship's bell tolled, the narrow plank, on which lay the body of the deceased sewn up in his hammock, was brought to the gangway, where an iron weight was attached to the body by the feet, and last of all the plank being tilted up, the heavy body plunged into the waves with a hollow splash, and the watery tomb closed over him.

We looked down into the abyss and beheld myriads of stars

reflected in all their lustre in the smooth mirror of the ocean; the deep, blue, unfathomable ocean appearing like a second firmament beneath our feet! Nothing in the gay scene around seemed out of harmony with the mournful act which the community of Christians on board the *Novara* had been celebrating. Everything about us—the brightly glistening stars, the whispering ripple of the waves, the balmy atmosphere, all left an impression of a higher state of felicity and tranquil happiness, and seemed to remind us that everything in the universe, even the poor remains we had just committed to the waves, obeyed but one eternal, immutable law!

On the morning of 17th October, three boats put off from the *Novara* with some of the officers and all the naturalists of the Expedition, bound for Sikayana, between three and four miles distant, while the frigate cruised about in the vicinity.

Stewart's Atoll (8° 22′ S., 162° 58′ E.) is a semi-lunar coral reef of about sixteen miles in circumference, with a deep lagoon in its centre, and five small wooded islands on the reef itself, which are visible from the deck of a ship about twelve miles away, and were first discovered by Captain Hunter, in May, 1791. These islands are named Sikayana, Fáole, Manduiloto, Baréna, and Maduáwe, and are so overgrown with cocoa-nut palms, that they appear capable of supporting a population of about 1000 souls (with the wants and requirements of men in the tropics).

The two largest islands, Sikayana and Fáole, lie exactly at the sharp horns of the lune-shaped atoll. Here we again

had an opportunity of observing the configuration of which all known atolls furnish examples, viz. that the islands found adjoining these reefs are almost invariably at the projecting extremities, where the surf rages on either side, and where consequently the conditions are most favourable for the heaping up of detached fragments of coral. The area of habitable dry land is to the extent of the reef in the proportion of 1 : 21. As may readily be assumed from the physical conditions of the islands, there is no drinkable water to be found upon them; the liquid contents of the cocoa-nut when fresh is almost the only beverage of the inhabitants, and hence the first thing the natives asked for when they came on board was for some "drinking-water," since, except of course during the wet season, when they catch the rain water, this is a rarity with them—we might almost say an article of luxury.

Sikayana, the Big Island of the English, the most easterly and largest of the islands, is about 1½th statute mile in length, and lies in 8° 22′ 24″ S., and 163° 1′ E. The reef which surrounds the island sinks at certain points sheer downwards, so that a ship may in perfect safety approach within a cable's length. We had to sail for a considerable time along this line of reef, on which the sea beat with a thundering surf, ere we came to one of those spots on the N.W. side where it is practicable in a boat to pass the atoll reef into the tranquil lagoon, which it encloses. At all times, even in the calmest weather, a tremendous surf roars against the reef, and even this point is inaccessible when there is a fresh breeze blowing. Here

we found some of the canoes of the natives awaiting our approach, who now, as though they had been on the look-out for our arrival, came off to us, some in their boats, others swimming, to inform us that, it being ebb-tide, the entry into the lagoon was not very easy, but that at high-water one could pass right over the reef, in even larger boats than ours. It was accordingly arranged that two of the boats should anchor outside the reef, and only one should be hauled inside the lagoon with a rope for our further use. But even this could not be managed until by removing all baggage and transhipping almost her entire crew, she had been made sufficiently light.

The passage between the coral reefs and the lagoon is at high-water about three feet deep, but at lowest ebb it is barely a foot in depth, and three to four feet wide, and then the reef juts up at most points to such extent, that a skilled equilibrist may (although not to the advantage of his soles) easily reach the interior of the lagoon without wetting his shoes. As soon, however, as this narrow entrance, which is about 300 feet long, has been passed, the navigation becomes easier. The appearance of the reef was very peculiar. Corals of every description, *Astrææ*, *Mæandrinæ*, *Madriporæ*, form a sort of series of clusters of stone-bushes, among which beautifully mottled fish swim about, while starfish of an exquisite indigo blue, and mussels of the most extraordinary forms, people the ground.

The atoll presents some very remarkable geological features. At its N.W. side, close to the reef and as it were growing to it, stand two singular vase-shaped rocks, from 8 to 10 feet in

height. While their base is bathed by the sea, their upper portions, which are about 20 feet in diameter, present the spectacle of luxuriant grass, brushwood, and one or two fruit-bearing cocoa-nut palms, so that the two crags looked like two gigantic flower-pots attached to the reef. They seem to be all that remains of an island which Ocean had first thrown up, and was now busy wearing away.

Another geological peculiarity is the occurrence of heaps of pumice-stone. These are found about the size of walnuts over the entire interior of the island of Fáole at those places which the swell of the waves cannot reach even in the stormiest weather, where they occur in such immense quantities (though there are no traces of them on the sand or shingle of the actual beach) that we may take for granted that the convulsion which brought them here must have occurred in times long gone by, the more so as this superposed pumice-stone exercises a marked and obvious influence upon the vegetation of the island. So far as its soil consists of heaps of fragments of coral and mussel-shells, the cocoa-nut palm reigns almost alone, whereas as soon as the pumice-stone region is reached, there begins an exceedingly luxuriant growth of lofty forest trees with huge trunks and umbrageous foliage, and an astonishingly abundant *flora* of species apparently peculiar to these Atoll islands. The English naturalist Jukes, who accompanied Captain Blackwood on his survey of Torres Straits, found beds of pumice along the entire east and north coasts of Australia, over an extent of 2000 miles, and under numer-

ous special conditions, but most frequently on flat grounds elevated about ten feet above high-water mark and more or less distant from the beach—never upon the beach itself. The occurrence of pumice in such vast quantities is of no slight interest in a geological point of view. It must have been some tremendous natural convulsions, an earthquake wave of enormous lateral dimensions, which threw up this pumice stone, and deposited it throughout this entire region at the same height above high-water mark. Since this phenomenon occurred, the general level of the coasts and islands on which this deposit of pumice is found, can scarcely have undergone any considerable alteration, if one is not inclined to assume for the entire region a perfectly equal elevation or depression.

The whole party of Excursionists had wandered along the reef to a spot at which we could embark once more, so as to row over to the next island, Fáole, which, however, the natives do not much frequent, except occasionally to collect cocoa-nuts and pandanus fruits. But as one main object had to be accomplished, namely, the supply of the ship with fresh provisions, which were not found here, some of the party went off to the principal settlement on the island of Sikayana, to barter some goods they had brought, against as much private supplies for themselves as could be conveniently conveyed to the boats and so taken on board.

While the natives were paddling along in their elegant canoes, escorting us as far as Sikayana, we offered a seat in our boat to the only white man on the island, the English

sailor already mentioned. This man was named John Davis, about forty years of age, a native of Greenwich, and was, according to his own story, left behind against his will by Captain Ross, a "sandal-wooder," who had visited this group in 1858. He stated he had just before been with Captain Ross at the Tonga Islands, where the captain sent two sailors on shore to fell sandal-wood. These men, however, got into a quarrel with the natives, who would not permit them to rob them of their property, in the course of which they lost their lives. The captain immediately proceeded to the islands himself with some of his crew well armed, attacked the unfortunate natives, shot five, and then sailed off. Davis had become obnoxious to the captain, because in consequence of over-work he had fallen ill with intermittent fever, and could not work, upon which his remorseless superior cast about how to get rid of the now useless seaman, and resolved to put him ashore by force on the next island which came in sight. What a fearful doom! To be abandoned, sick and helpless, on a lone island far from the highways of the world, where ships but seldom touched, and amid savages with whose tongue he was unacquainted! If even one were disposed to doubt the possibility of such inhuman cruelty, it would find mournful confirmation in many similar instances. To this charge the "sandal-wooders" are especially amenable, who visit the islands of the South Sea to collect the costly sandal-wood, and in the prosecution of their enterprise seem to go upon the exclusive principle that the coloured man has

no property over the natural wealth of these islands, and has no right to resist the wishes of the white man!

Commander Erskine of H. M. S. *Savannah*, mentions a case in which an English merchantman, engaged in the sandal-wood traffic, entered into an engagement to employ his whole crew in assisting one native tribe to overpower its neighbour, in return for which timely assistance certain places were pointed out where the coveted sandal-wood was found in great abundance. A battle took place, and a number of prisoners were carried on board the ship, of whom, during the passage to the sandal-wood-producing islands, several were in the presence of the European crew coolly slaughtered and eaten by their cannibal foes of the Fee-jee Islands!!

Davis, whom the natives for distinction's sake called simply "the white man," could not expatiate enough on the cordiality and kind treatment he received from the poor inhabitants of Sikayana during his stay. Since April no ship had called at the island, or even been visible from it. He begged the favour of a passage to Sydney, which was readily accorded him on condition he would first repay all his obligations to the natives, and that on their side there should be no objections made to his leaving. On our arrival in Sydney we learned that Captain Ross, who had put Davis ashore at Sikayana, had been tried for another still greater atrocity; he had inflicted Lynch-law, by hanging some of the natives of New Caledonia at his yard-arm. Ross was somewhat later acquitted by the judges at Sydney, but public opinion reversed the verdict.

After a row of an hour and a half we at last reached the island of Sikayana, having previously met three canoes, one of which was manned by twelve rowers, who now entered on a sort of regatta contest with us. These canoes, not more than a foot and a half wide, glide with uncommon velocity through the water, but despite their out-riggers, they are not adapted for carrying much provisions. We found it quite easy to land at the place, and drew up our boat upon the sandy beach.

The world of these islanders, the entire area of dry habitable land upon this coral reef, is about one-eighth of an English square mile; no stream, no mountain, no eminence adorns the island, the highest part of which is just sufficiently elevated to enable the winds and waves to heap up sand and débris; around it on every side is the boundless ocean, and its mineral wealth is reduced to one single mineral, carbonated chalk, deposited in the brine by thousands of millions of coral animals. Hither too the ocean in some extraordinary cases wafts pumice and other stones lighter than water, which somewhat improve the soil, or occasionally stones are transported, entangled in the roots of floating trees, with which the denizens of this little place can grind the mussel-shells, of which they make all their tools, as well as knives and hatchets.

The immense vegetable kingdom has but 20 or 30 representatives here, whose seeds have been transported hither by the sea from richer and more congenial soils, and thrown

up by it upon the strand. Animals are still more scarce. A few sea-swallows and insects form the whole Fauna of the group. The sea furnishes the only supply of animal food, in the shape of fish, crabs, and shell-fish. One may well ask, what degree of moral or spiritual development can be attained by a race of men whose sphere of action is confined to a solitary coral reef! Yet the mode of existence of the inhabitants of Stewart's Islands is by no means of the most primitive or simple nature; through the occasional visits of ships they have obtained much, by which they have sensibly improved their condition. They now possess swine, poultry, and various tubers, which seem greatly to thrive on the island, and which they can now exchange for other articles of prime necessity.

Sikayana is the only member of the group which is permanently inhabited, and that by a sincerely hospitable, most friendly race. Their origin is variously accounted for.

Among the natives themselves there is a dim tradition that Captain Cook transported hither the first settlers. Another version is, that the first inhabitants came from South Island, 130 miles W. of Stewart's Islands, and that they were brought hither by whalers, which latter, when they no longer needed the services of these poor people, sought how most easily to get rid of them. At the same time several English and American sailors, who at various times have been left in these islands in consequence of sickness, want of further employment, love of adventure, or quarrels with

their captains, must have largely contributed to the present quite peculiar mixture. The practice of leaving upon any suitable island such natives of the South Sea groups as may take service with English or American whalers, is very common, and sufficiently explains the mode of first settling many of these islands of Oceania.

When Captain Cheyne, who has greatly contributed to our more intimate knowledge of the islands of the West Pacific, visited Sikayana in September, 1847, the population amounted to 48 men, 73 women, and 50 children, who inhabited a small village lying on the lagoon at the eastern end of the island. Although eleven years had elapsed ere we visited this simple community, their numbers did not appear materially to have increased.

Considering the powerful, healthy appearance of the natives, it should seem that we must ascribe this stagnation in amount of population less to the influence of climate, than to the ravages of the various diseases which are from time to time introduced by foreign ships. Thus we saw one woman whose whole body was deeply marked with small-pox, and presented a living example that the fell scourge of all uncivilized races is no longer unknown in Sikayana.

At the landing-place we were received by the king of the island, a very aged man with grey hair and silver beard. He sat on the grass close to the shore under the shade of cocoa-nut palms, driving away with his hand the flies which were stinging his naked body. After a brief welcome he

invited us to be seated beside him on Nature's own soft green carpet.

The natives whom we met here were all tall handsome men, with good features, decidedly of a European cast. The hair was black, very crisp, but not the slightest appearance of being woolly. Many had shaved it till there only remained a long tail; most of them had their arms and legs tattooed, but wore no ear or nose ornaments like the Solomon Islanders. Round the loins they wore a sort of girdle, four or five inches wide, of strips of plants plaited by the women. In addition to this, most of them wore some piece of European clothing; drawers, old caps, but most commonly a sort of jacket without sleeves made of calico, which only covered the back and chest. Like the natives of the Nicobars, they showed great curiosity to learn our names, and kept repeating them over and over, apparently to impress them upon their memory. They had beyond a doubt taken their own names from sailors and ship captains, with whom they had once been in communication.

Close to the shore, among some scattered palm-trees, stood a few wretched huts, compared with which the bee-hive huts of the Nicobar Islanders appear like palaces. They consisted of a roofing woven of cocoa-nut palm-leaves, planted upon the naked soil which serves as a floor, and closed in front and rear with mats of similar texture. The interior was no less poverty-stricken than the exterior. We could see no articles of furniture beyond a few baskets and

battered boxes, in which the islanders stow away their small property.

A crowd of eager expectants had gathered round the crates of merchandise which our sailors had brought on shore, and the barter began.

The natives had swine, poultry, a few eggs, papayas, Taro, cocoa-nuts, and bananas to offer, while we had an assortment of knives, hatchets, saws, flints, fish-hooks, calico, linen, blue cloth, ribbons, linen-thread, needles, coarse tobacco, biscuit, red coral, glass beads, empty bottles, &c. &c.

This commerce was something higher than a mere barter—it had also a psychological interest of its own. Useful goods and tools found a much less demand than baubles and objects of personal adornment; and for a string of glass beads only fit to hang round the neck of a wife, or to put as a bracelet upon the arm of some little dusky daughter, provisions enough were given away to have supported an entire family for days.

Red and green seemed the colours most in demand, and the small-beads were in far more request than the larger and heavier descriptions, even if these latter were more costly and neat. It seemed the women were not permitted to show themselves at market, which must have been a sore enough disappointment for many; but the men earnestly requested before closing with an offer to be permitted to carry off the coveted prizes, leaving their own articles of barter in pledge, apparently with the gallant attention of first of all obtaining

the advice and consent of their better halves. Hence it frequently happened that the article first selected was exchanged for some other widely different, or the whole bargain given up.

The women whom we afterwards saw in their huts were all tall and powerfully built, but very unattractive, the majority appearing prematurely old. The sole covering was a piece of gay-coloured calico tolerably wide, which they wore around their loins. Their lower limbs and faces were tattooed, the latter however with only a few cross-bars.

The two hampers of assorted articles, which was our stock in trade, were ere long nearly emptied, and as the sailors would have found it hard work to bring off the provisions we had purchased in our small boat, it was agreed to break up our improvised exchange, and return to Fáole with our valuable cargo of fresh provisions.*

While the barter was going on, the author of this narrative

* As it is not uninteresting to know the course of exchange at Sikayana existing between the products of European industry and its native products, we subjoin a few of the most important equivalents:

For 5 lbs. tobacco	one pig.
,, 20 Steel fish-hooks	,,
,, 5 Strings of red corals	,,
,, 5 ,, ,, green and red glass beads	,,
,, 5 Packets of needles and thread	,,
,, 10 Ells of calico	,,
,, 5 Fish-hooks	ten eggs.
,, ,, ,, ,, ...	two hens.
,, 10 ,, ,, ...	30 pieces of Taro.
,, 2 Packets needles and threads	,, ,, ,,
,, 1 Packet old playing cards	4 hens.

occupied himself with making some anthropometrical measurements, and at the same time noting down a few cursory remarks respecting these interesting people.

The chief food of these islanders consists of fish, cocoanuts, taro, and the fruit of the pandanus (*dawa*); only at rare intervals do they taste pork or poultry. The rearing of pigs and poultry is chiefly carried on for the purpose of trading with foreign vessels, so as to obtain in return the products of a higher civilization. Their fish-nets are prepared from the rind of their trees. A few looms which they also possess have been given them by whale-fishers. The cincture round the loins, which is their sole article of apparel, is also prepared from the inner bark of the tree.

When the king dies, the oldest member of the community is elected his successor. At their festivals they sing in a sort of monotonous drone, and blow at the same time through mussel-shells.

When mourning for the dead, they stain their faces red with the seeds of the *Bixa ocellana*, and wear a piece of white calico, shaped something like a capuchin's hood, which reaches down till it covers the shoulder. One native, who was wearing one of these head coverings, could not be induced to traffic, nor even to approach the place where our improvised market was being held, because, as he made us understand, one of his near relatives had lately died. Altogether the inhabitants of Sikayana struck us as a primitive, very moral, and honourable race, and it made us almost

melancholy to think that these excellent people should be without the blessings of Christianity. To our great amazement, however, we learned that the natives themselves strenuously opposed the settlement in their midst of any missionaries of any Christian denomination,—"Because," said they, "all their Kai-kai (i. e. their food) would belong to the missionaries." This naïve reply reminds us of a similar remark on the part of the Quiche Indians, which we once overheard in the highlands of Guatemala, in whose language a missionary or priest is known as Ki-sol-re-le-ak-úch, which being interpreted means "devourer of all hens!" And just as among the Mormons every care is taken to keep certain professions out of their community, as, for instance, the physician, in order to prevent illness, or the lawyer, with the intent to keep away law-suits, thus in their simplicity the natives of Sikayana have fallen into the error of viewing the missionary, that moral physician, as only of importance or of necessity in those places where there are really spiritual and moral evils to cure!

The liquors of Europe are as yet but little known to the inhabitants of Sikayana. In none of the huts could we discern any sort of spirituous fluids, nor was any offered to us. Even during the trading, amid the demands for every sort of article, no desire was expressed for them, not a question even was asked respecting them, whereas hitherto all the wild or semi-savage races with which we came in contact at once clamoured for "Brandy," and not seldom presented themselves in a riotous

condition. That there is as yet no demand for spirits at Sikayana shows how little intercourse they can as yet have had with civilization. In former years this group was occasionally visited by American and English merchantmen, owing to the abundance of Trepang. Since the year 1845, however, when one American captain collected 250 Chinese piculs* (about 15 tons), and ten years later when Captain Cheyne in the course of nine months gathered 265 piculs (about 16¾ tons), the business is no longer profitable and at present years sometimes slip by without a ship lying to off Sikayana.

As these worm-like animals,† which in the dried state command, like the Salangan swallows' nests, a high price as a costly delicacy in China and Japan, form an important article of commerce and employ a considerable number of ships annually, we shall indulge in a few remarks on the very laborious operations of preparing the Trepang.

Of the large number of varieties of Trepang which are found among the coral-reefs of the Pacific, there are only ten suited to the Chinese market, which are accurately distinguished by their special names. As they fetch a price according to quality of from 6 to 35 dollars per picul, it is

* One Chinese picul = 133⅓ lbs. English, whereas one Dutch picul = 135⅗ lbs. English.

† Called *Trepang* by the Malays, *hái-schni* by the Chinese, and *Biche-de-mar* by both English and French. Of this *holothuria* or sea-cucumber (*Holothuria edulis*), there are about 400 tons annually imported into China from the various islands of the Southern Ocean.

a matter of great importance to obtain the very highest qualities.

The four species most in demand are known in China by the following names,—*Bangkolungan*, *Kiskisan*, *Talipan*, and *Munang*, each of which has a distinctive appearance, and is found at various depths on the coral reefs.

Bangkolungan, when captured, is from 11 to 15 inches in length, of an oval form, brown on the back, white on the belly, incrusted with chalk, and with a row of papillæ or warts along the side. This species is hard, stiff, and possesses hardly any means of progression beyond expanding and contracting at will. They are found on the inner edge of the coral reef in coral sandy ground, under water of from 2 to 10 fathoms, and are difficult to get at without diving. Kiskisan is from 6 to 12 inches long, oval, very black, smooth on the back, dark grey belly, and with a row of papillæ along its side. This description is found in shallow water near the highest portion of the reef, and on a bottom of coral and sand. *Talipan* varies in length from 9 inches to 2 feet, and is the most peculiar-looking of all the Trepang species. This sort is found in all parts of the reef, but chiefly in water of from 2 to 3 fathoms. It is of a dark red colour, and less bulky than either of the sorts already described. The back is covered with large red spots, which readily distinguish it from all other species. It is more flexible than the black sort, and more difficult to prepare. *Munang* is oval, small, quite black, and rarely measures above

eight inches in length. It has neither warts nor other excrescences, and is found in shallow water on the coral flats, and frequently also among the sea-tangle along the shore. It is this sort which the Americans usually catch at the Feejee Islands. In the Chinese markets, a picul of *Munang* is worth 15 to 25 dollars. Besides these four principal species, there are a variety of less valuable descriptions, such as Zapatos-China, Lowlowan, Balati-blanco, Matan, Hangenan, and Zapatos-Grande.

In order to prepare these four sorts of Trepang for commerce, they are first soaked in a large iron kettle for from 5 to 10 minutes in boiling water, and when thoroughly heated through, are taken out. The portion of the animal which is cut off, when well boiled, should be of an amber colour tinged with blue, and feel somewhat like Indian rubber.

A certain degree of dexterity and practice are requisite for boiling Trepang to the proper point and afterwards drying it. While it becomes puffed out through too sudden an application of heat, and porous like sponge, too low a temperature or too short a time destroys it on the other hand, and in 24 hours it becomes quite tainted. Trepang dried in the sun is more valuable than that dried on the island, nor does the native ever care for those he dries over his wood fire. Probably the former mode of preparing it would not pay for a ship, since at least twenty days are necessary to

dry Trepang in the sun, whereas over a wood fire the same end is attained in four days.

On the whole, the precautions requisite properly to prepare Trepang are so manifold and require such an expenditure of time, that only those who for years have been exclusively devoted to the business can secure a successful result. Consequently the trade is exceedingly remunerative, and numbers of captains have within a very few years realized a competency and even affluence by preparing Trepang for the Chinese market.

We employed our time, when sailing back to the island of Fáole, in finishing a small vocabulary of the language in use by the inhabitants of the Stewart Island group, which we accomplished with the last stroke of the oar that brought our heavily-laden boat back to Fáole, where the rest of our companions already anxiously awaited our return. We had occasion to remark with surprise the perseverance and readiness of comprehension of one native named Károsi, to whose assistance we are entirely indebted for the preparation of this vocabulary.

After a stay of about four hours on the island, we returned to the ship about 4.30 P.M., and by sundown were again under weigh for Sydney.* If the inhabitants of the Solomon group

* During our excursion, there were taken on board the frigate, which cruised to and fro in short tacks off the island, about 200 readings of the temperature, at depths of every 50 fathoms. It was also intended to experiment as to soundings, but the

were the most savage race of men we encountered throughout our cruise, these amiable Sikayanese left on us the impression of being the most moral and peacefully disposed race of aborigines that we became acquainted with, and even to this day the few fleeting but highly suggestive hours we spent with these primitive people are among the most singular, yet delightful, on which memory rests, when recalling the incidents of our circumnavigation.*

A fresh breeze hurried us rapidly to the southward during the 18th, but we soon entered once more upon the region of

state of the weather prevented this, as there were continual squalls, and the threatening state of the weather did not admit of a boat being launched. However at a distance of half a mile from the reef, no bottom was found with 200 fathoms of line.

* It is perhaps a duty to our gallant companions of every grade to vindicate the Expedition once more, and finally, from certain malignant calumnies which, upwards of a year after we had left Australian waters, were circulated in the columns of even respectable newspapers, accusing the crew of the *Novara* of having been guilty of most scandalous excesses and wanton robbery while at Sikayana. It seems however needless to insist that not the slightest pretext for such infamous aspersions was furnished by any of the party who spent these few hours in Sikayana, of which we have sketched the details in the present chapter. But the fact that they could be circulated without its being possible to contradict them on official authority points to a serious defect in our diplomatic position abroad. True, that no respectable member of the community accredited the idle mischievous report; true that the leading inhabitants, English, American, and German, strenuously combated it on every possible occasion, and in every possible manner. Yet had Austria been a recognized power, instead of a friendly guest, it needs but little acquaintance with the etiquette of public and official life to know that the calumny must have been stifled in its birth, by the prompt action of those specially appointed to protect the fair fame of their country in these distant waters. Not till her flag floats regularly to the breeze in the most distant countries, instead of being that of a casual visitor, will Austria, and through her the entire German nation, receive that respect, and occupy that position among the family of nations, to which her intelligence, her energy, and her important influence upon the progress of civilization alike entitle her.

squalls * and calms, and on 19th and 20th October we were lying listlessly about 15 miles E., by chart, from Sesarga,† called also *Ile de Contrariété* (9° 49′ S., 162° 13′ E.), condemned to inactivity to the northward of San Christoval. We could now satisfy ourselves that it is quite erroneous to identify this island with that seen by Pedro de Ortega in 1567, round in shape, and with a lofty volcano in its midst continually throwing up smoke and steam. *Ile de Contrariété*, as seen from the deck of our frigate, presented the appearance of a long wooded ridge, averaging about 800 feet in height, whereas some of the peaks of San Christoval, 3000 or 4000 feet in height, presented all the configuration peculiar to a volcanic island; this was especially the case with one remarkably regular cone of about 2000 feet in height, which rises quite close to Cape Surville. So that Burney's theory seems the most probable, that Ortega's Sesarga is no other than Mount Lammot, 8000 feet high, on Guadalcanar (9° 50′ S., 160° 20′ E.).

At last, on 21st October, we succeeded in weathering Cape Surville. Thus the Solomon's group too were what seamen call "hull-down," and we might look forward to a speedy termination to this most tedious and unpropitious voyage. For a long month we had, while to the northward of the Solomon's Islands, vainly sighed for a fresh breeze, and now all at once

* The quantity of rain that falls in these latitudes is something almost incredible. One single squall from the N.W. was accompanied by a rain fall of *three* inches, in the course of *five hours*, whereas the *entire rain fall* for the *year* in London, for instance, is only 18.07 inches.

† The native name is Ulatúa.

the S.E. trade was blowing so strong that the ship could only lay her course to the southward under reduced sail, close-hauled, and had now to plunge laboriously through the heavy seas, which the stiff breeze was knocking up. On the 25th and 26th October it blew a regular storm from the S.E., we forging along under double-reefed square-sails, till it almost seemed that the end of our voyage was destined to be as stormy as its commencement "away in the China seas." The ship's timbers creaked and groaned, as though they would break into a thousand pieces, while the whistling and moaning of the wind, the raging and roaring of the sea, the tremendous crash of the waves against our bulwarks, left no peace night or day for the "non-effectives," as all passengers not regularly borne upon the ship's books are called on board a man-of-war. As though to increase the discomfort of their position, it happened that the frigate began to make water to such an extent, that in what was fortunately but a very small portion of the hold, the water rose to fifty inches within four hours! It was supposed that during the typhoon on the China sea, some of the copper plates had been wrenched off, and that the water was finding entrance through some leak in her outer timbers, but the most rigid examination failed to discover its whereabouts. At all events it must have been at or above the water line, as when the sea rose higher than usual, or the ship lurched much, the water was sure to gain. We were compelled consequently to vary from our original course by the open sea-way along the west coast of New Caledonia,

and steer for the coral sea, thickly studded with reefs, which lies between New Caledonia and "Sandy Cape" on the shores of Australia, as by adopting this dangerous route we should at least have smoother water and more favourable winds. Meanwhile, every possible precaution was taken in handling the ship, so as not to increase the leak, and a sail was kept ready to be fothered from without over the leaky part in case of necessity.

On 28th October we had expected to be in sight of the great horse-shoe-shaped Bampton Reef. But there was no surf discernible from the mast-head, only the change to smooth water, which we at once felt, proving that the reef really existed, and that we were to leeward of it. Its position is so variously laid down on the charts, that while by one chart we must have been upon the very reef itself, we were, according to a second, four miles, and, according to a third, fourteen miles to the eastward of it! The last-mentioned seemed to be the most correct, since at four miles the surf must have been visible, whereas it would be impossible to see it at fourteen miles.

By 30th October we had passed the latitude of Sandy Cape, and could now steer direct for Sydney, the capital of the colony of New South Wales. The same day we also crossed the tropic of Capricorn. The temperature, which had been falling regularly ever since we left the Solomon Islands, in 28° S., was as low as 64°.4 Fahr., so that we found it advisable to resume our woollen clothing.

Ten months we had now spent in the tropics, in the hottest seas of the globe, and we now felt, on a beautiful November morning in the southern tropics, as on a clear spring morning at home. On 4th November we had our first peep of the coast of Australia at Smoky Cape, a fresh easterly breeze filling our sails, as we bowled along at 10 knots an hour, constantly nearing the next station of our voyage. On the 5th, at 2 P. M., the not very high land round Port Jackson came in sight, and we had not to alter her course by one spoke, so that our chronometer had given unmistakeable proof of its accuracy. The coast is for the most part rather flat and monotonous, but we soon recognized the entrance by North Cape, which rises sheer out of the water at the harbour mouth, where we also took a pilot on board. The light-house here, 420 feet above sea-level, had been visible from the deck of the frigate 15 miles away! During the whole voyage we had only seen one vessel, an American clipper off the Marianne Archipelago, and were greatly amazed to find not a single sail in the vicinity of the port. At last, just as we got abreast of the entrance, we saw a steamer and some small boats making for the land. At 6 P. M., after a voyage of 82 days, during which we had sailed 5930 miles, the anchor was let go in the magnificent harbour of Port Jackson, off Garden Island, to the N. E. of the city of Sydney. We had reached in safety the fifth quarter of the globe!

END OF VOL. II.

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